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1

THE TELEGRAPHIST

A JOURNAL

OF

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• The Telegraphist •

A Monthly Journal for Postal, Telephone, and Railway Telegraph Clerks.

SATURDAY, DECEMBER 1, 1883.

INTRODUCTORY.

BY THE EDITOR.



A DISTINGUISHED author once said to us: "The man who finds a gap and fills it, whether it be in fiction, science, or trade, is almost certain of success." Now, we flatter ourselves that in introducing *THE TELEGRAPHIST* to an intelligent and deserving class of public servants, we are filling a gap, and a wide one, too! For many years the Postal and Telegraph Officials of Great Britain have been unrepresented in current literature; they have had no organ devoted exclusively to their interests. The Railway Telegraph Clerk has been long neglected, and the industrious, hard-working Letter-Carrier has had to "plod his weary way" without any public recognition of his merits beyond the small sum of money presented to him at Christmas-time. This, then, is the gap we profess to have found. How do we propose to fill it? By offering a Journal full of dry details, stock and share lists, mathematical problems, trials of rival Telephone Companies, and columns of notices culled from official gazettes? No,—by making our paper an organ light and interesting to both male and female clerks; by publishing from time to time events of local and general interest; by ventilating just grievances either on the part of the employer or the employed; and—whether we sink or swim—by upholding the weak and defending the oppressed; by the recognition of patient merit, and the exposure of tyranny, public or official. These are the lines upon which we intend to work, and we are very sanguine as to the result of our enterprise; for we know that the postal and telegraph clerks of this country are ever ready to rally round and support those who take an interest in their welfare, and offer them a helping hand. Long experience "in the ranks" has convinced us that a strictly scientific journal would meet with very little encouragement from the great army of telegraphists. Therefore we have resolved to make our paper amusing and interesting, with just a seasoning of the practical applications of electricity to satisfy the studious ones who desire to learn something about the instruments they work.

Very few ladies or gentlemen engaged in Post-offices care about the prices of stocks and shares; but many enjoy good literature, and an evening now and then at the play. Space will always be reserved for reviews of books and theatrical gossip; and we hope our fair readers will find plenty to please them in the columns devoted to fiction. The distinguishing feature, however, will be that portion of *THE TELEGRAPHIST* set aside for the exclusive use of our Postal and Telegraph Correspondents in London and the Provinces. Reporters will be elected to supply information of interest to Postmasters, Clerks, and Letter-Carriers, such as notices of meetings, club business, births, marriages, and deaths, accidents, excursion parties, amusements, alteration of premises, removals, and promotions. In brief, our columns will always be open to the Service,

and we anticipate bringing to light some of the talent which has too long wasted its sweetness on the desert air of some dingy corner of a country post-office.

With these promises for the future we start our bantling. May it soon walk, and, ere long, run on its prosperous career.

A VISIT TO THE CENTRAL TELEGRAPH OFFICE.

TWENTY years ago if we had been asked to run the gauntlet of some hundreds of beautiful damsels, we should have shrunk from the ordeal, and resigned our office to one of our elders. A visit to Old T.S. was considered enough to try a man's courage; but what were the instrument-rooms at Lothbury or Telegraph-street compared with the spacious galleries at St. Martin's? It is absurd to draw comparisons; therefore we will endeavour to give our provincial readers, and those who are curious to learn something of the Central Telegraph Office, a simple account of our visit to that vast edifice.

On entering the building from St. Martin's-le-Grand, we first encountered an elderly policeman, comfortably seated in a cosy-looking box, not unlike the ticket office of a theatre. From that highly-respectable member of the Force we made inquiries as to the direction we ought to take in order to find the Controller's office. Sir Robert answered our questions with rare civility, and didn't look as if he wanted a tip. Following his instructions, we mounted two flights of stairs, and when we arrived at the top, puffing and blowing, we were not a little startled at the sudden appearance of a youth, who tumbled through a glass-door like the sprite in a pantomime, struck an attitude, and demanded our business. When the lad had eyed us from top to toe, and satisfied himself that we were not dynamite conspirators, he led the way to a waiting-room, and in less than two minutes one of the sub-controllers (Mr. Blanchard) appeared, and ushered us into the presence of the Controller of Telegraphs (Mr. H. C. Fischer). We must confess that our reception somewhat startled us. We had been led to believe that we should be coldly received, and perhaps refused admission to the sacred precincts of the instrument-room, but, to our surprise, we met with a cordial reception from the Controller, who, instead of putting obstacles in our way, gave us every assistance in his power.

Thus encouraged, we felt ourselves fortified and ready to face—not the enemy, but the ladies! Mr. C. A. Morgan, of the engineering department, was elected to be our guide, philosopher, and friend, on our tour of inspection. As we entered the great room it was some time before we recovered the power of speech. What a sight met our eyes! and Oh, what a clatter-patter, tick-tick, and puff-puff, struck upon our ears! And this was the wonderful T.S. we had heard so much about! Then our thoughts wandered back to bygone days, and we saw in our mind's eye the chief offices of the old companies, the double needle with a case like the front of a Wesleyan chapel, and the Morse embosser, with

a huge clock-weight underneath the table. As this picture faded away, the single needles and the ink-writers changed places with the primitive instruments; and we were startled out of our reverie by our courteous guide, who pointed out the principal news wires, and invited us to examine the late Sir Charles Wheatstone's automatic transmitter. The past again rose up before us, for we were present when Sir Charles (then Mr.) Wheatstone tried his first automatic apparatus and perforator. It was in the office of the Submarine Telegraph Company, one evening when the lines were clear, Mr. France, the engineer, lent Sir Charles one of the Boulogne wires; and we shall ever remember the curious expressions on the clerks' faces as they examined the perforated paper handed round for their inspection.

Telegraphists who have never seen the automatic instruments at work can form no conception of these beautiful contrivances. On the ordinary Morse printer thirty-five words a minute is considered a good speed; but by the automatic 200 words a minute can be transmitted with perfect ease. Without these instruments the amount of presswork that now accumulates during the day could never be got through. Our friendly engineer took great pains to show and explain the internal parts of the perforators and automatics, and informed us as we left the news division that during the Parliamentary Session not less than half a million words are transmitted every night! We next inspected the "Duplex" and "Quadruplex" systems. What should we have thought twenty or twenty-five years ago if we had been asked to solve the problem of sending two or four messages on one wire at the same time? The man bold enough to propose such a feat of telegraphy would have been voted a fit subject for Bedlam; yet no less than fourteen circuits are worked on the "Quadruplex" system, and fourteen wires do the work of fifty-six ordinary lines! Our attention was now directed to the "Chronograph"—the contrivance by means of which Greenwich time is sent to all the principal towns in the kingdom. We saw poor Cromwell Varley's original "Chronograph," now a sacred relic of the great electrician. The sight of the gigantic test-box almost took our breath away. An outsider would see nothing but confusion there; but each terminal was numbered, the instruments and lines of every circuit could be picked out by the engineer in a moment, and all the earth terminals were black, to distinguish them from the others.

The male portion of the staff on duty appeared to be thoroughly up to their work—indeed, many of them manipulated their instruments with an air of careless indifference; but our well-trained ear detected the sending and receiving of the skilled telegraphist. Such ease and dexterity can only be acquired after years of incessant practice on busy lines. We noticed a few handsome fellows, too, and as we passed the Foreign Gallery we were told that several of the gentlemen in that division were linguists.

One of the most interesting sights at T.S. is the long row of pneumatic tubes through which telegrams are despatched to the principal district offices for delivery. To watch the "carriers" start on their journey gives one a better idea of the enormous pressure of the atmosphere than all the chapters on air-pumps ever published. The men in charge of the tubes seemed to work automatically, so well did they understand their duties. When we had done gazing at the pneumatic tubes we began to encounter the fair ones of T.S. Ladies stout, thin, tall, and short met us at every turn. We think we saw every conceivable type of feminine beauty. It was well we were no longer young, and were invulnerable to the

shafts of Cupid, or we might have felt a few of his darts before we left that great room. Some of the pretty creatures were sorting telegrams and preparing them for the tubes; others were sipping tea and nibbling thin slices of bread and butter. At length we came to the Metropolitan section. Here the noise was less deafening, so we were able to take a calm survey of the scene—and a pretty one it was, too. Now, for the first time, the needles came into view, and Mr. Morgan gave the clerks of this division an excellent character. He assured us that many could read "G," and, take them all in all, he considered them an efficient body of Telegraphists. In one of the quietest corners of the gallery—where the instruments to the west of London are located—we noticed two blonde beauties, and for the first time nearly lost our heart. They had very light flaxen hair, and being dressed in black, relieved with a few silver ornaments, these two sylph-like figures "lent enchantment to the scene." Just as they bestowed a sweet smile upon us, Mr. Morgan hurried us away, and we were adamant again. We felt it was wise to make our exit, so we left fairyland and descended to the regions below to be introduced to the chief demon—we beg his pardon—we mean the Chief of the Battery Department, Mr. Andrews. Here upon shelves which, if extended in a single line, would reach from St. Martin's-le-Grand to the Marble Arch, were rows of earthenware jars, containing the elements which, by some kind of vibratory motion not yet understood, generate the force we call electricity. Mr. Andrews was most courteous and communicative. He informed us that in his department no less than 12,000 Daniell, 8,000 Fullers, and 700 or 800 Leclanché cells were in constant use. We next inspected the machine for reducing old telegram-forms into pulp, and ended our tour in the engine-room, where three magnificent beam-engines (tended, as our guide remarked, with greater care than many an infant) sent us into ecstasies. We began with electricity and finished with steam. The spirit of Watt seemed to hover over us. We looked up at that glorious invention, the parallel motion, and as the governor whirled round, and the rigid piston-rods glided noiselessly up and down, we felt a reverence for the mighty brain that conceived the wonderful piece of mechanism before us. We thought of the steam-engine as Watt found it, and then feasted our eyes on the engine as he left it, and so ended our visit to T.S. In conclusion, we cannot praise too highly the courtesy and attention we received at the hands of the Controller, Mr. J. J. W. Blanchard, Sub-Controller, and Mr. C. A. Morgan, the engineer, who so patiently conducted us through the various departments, and so carefully described the action of the modern instruments.

Mr. Fischer's cordial reception augurs well for the future of our journal. We are convinced that the worthy Controller is with us, not against us, and it will be our earnest endeavour to stimulate a good feeling between the telegraphist and his superior officers.

Through the kindness of the Controller we are enabled to give the following interesting details:—

NUMBER OF TELEGRAPH CLERKS AT THE CENTRAL.—Males, 1,149; Females, 659. Total, 1,808.

INSTRUMENTS.—*Metropolitan Section*: 21 Duplex Sounders; 58 Duplex Morse; 86 Morse Printers; 53 Sounders; 130 Single-needles; 4 Wheatstone's A.B.C. *Provincial Section*: 22 Wheatstone Duplex; 60 Wheatstone Automatic; 14 Quadruplex; 25 Duplex Recorders; 77 Duplex Sounders; 55 Morse Printers; 37 Sounders; 26 Single-needles; 1 Bright's Bell. Total, 669 instruments.

TELEGRAPH INSTRUMENTS,

AND HOW TO UNDERSTAND THEM.*

BY ELEKTRON.

STRANGE as it may appear, it is nevertheless true, that the great majority of telegraphists understand little or nothing about the instruments they so skilfully manipulate. The scientific branch of telegraphy is entirely neglected by some thousands of intelligent operators, who possess the brains if they haven't the opportunity to learn all about the action and construction of their instruments and batteries. An outsider might well express surprise at hearing this fact for the first time, but the reason is easily discovered. Telegraphists have very little time for scientific studies, and the majority of the text-books are too technical; indeed, the very sight of a page of mathematical formulæ is enough to strike terror into the heart of any inquisitive young lady who opens a manual of electricity or telegraphy. I have set myself a somewhat difficult task, for I purpose writing a few papers on Theoretical Telegraphy; not for electricians, but for the benefit of male and female operators who are curious to know a little about the apparatuses in their charge. In simple language I will briefly describe the various instruments now in use, and I am confident that if the readers of the TELEGRAPHIST will give me a very small percentage of their leisure moments, they will soon take an interest in my subject, and, as a natural result, their work will become less mechanical, and, as they advance in scientific knowledge, the "dirty batteries" will rise a hundred per cent. in their estimation. The single needles, so long neglected and only regarded as thumping machines, will appear as beautiful philosophical instruments made for demonstrating some of the most wonderful natural laws. As the scales fall from your eyes, dear reader, and the light from the torch of science is permitted to enter, many things connected with your work will change their aspect, and what you may have considered beneath your notice will then fascinate and delight you. How many trivial faults occur in sub and country offices, which might be remedied in a few moments without sending for the engineer or lineman if the clerks had a little technical knowledge? Sometimes the turn of a screw, or the removal of a speck of dirt, is all that is needed. Many breakdowns are caused by wires inside the battery-boxes becoming disconnected; therefore, I will start with the batteries, and give you some idea of what is going on inside the long black troughs in the cupboard. To understand the action of the batteries now in use, a description of the first cell, contrived by Volta, an Italian philosopher of Pavia, is absolutely necessary. You have all heard of Voltaic electricity, and you may also know that electricity obtained by chemical action is called Voltaic, in honour of the discoverer, Professor Volta. The simple Voltaic cell consists of two pieces of metal, a bit of zinc, and a bit of copper, immersed in a cup or glass of water. I will tell you how to make one. Get a farthing, and file it on a spot near the edge until it is quite bright; then solder to the farthing a piece of copper wire, taking care to file the end you intend to join to the farthing until it is perfectly clean. A sixpenny blow-pipe, a bit of zinc, a pennyworth of solder, and a little powdered resin, are all the tools and articles you will require besides the copper.

Many an amateur has failed ignominiously with the blow-pipe through ignorance of the scientific principles of soldering. You want to get your bit of wire to stick to

your coin, and you may think that the resin will do it for you; but that is not all. The two metals you wish to unite *must* have perfectly clean surfaces. They will not adhere if they are not bright and clean. Now, you may file away as much as you like and get a glittering surface, but the moment you apply heat to the metal an oxide is formed—that is, the oxygen gas of the air combines with the copper or whatever metal you are using, and it forms a film; the two surfaces are not clean, and they will not stick together. But, if you put a small pinch of resin, borax, or sulphate of zinc where you wish to make your joint, and bring the metals into the flame of the blow-pipe, they will adhere firmly, and you can finish off your work neatly without any difficulty. The resin, borax, or sulphate takes away the oxygen, and the two surfaces are clean again and cohere. Having soldered the farthing to the copper wire, you next join a piece of zinc cut with a pair of scissors the same size and form as the coin to another piece of wire, taking exactly the same precautions as you observed with the copper.

If you have not a very sensitive galvanometer, you may not get a deflection from water only; so you had better try a solution of common salt. Cut a piece of flannel exactly the same size as your little zinc and copper plates. Soak it in some strong salt and water, and put it between the metal discs; then connect the wires to the terminals of your galvanometer, and you will get a good deflection.

If you do not possess an office-galvanometer you can easily make one at the cost of a few pence. When I have done with the batteries I will teach you how to make an extremely sensitive galvanometer at a very small outlay. One thing at a time, however.

To return to the simple voltaic cell—a plate of copper and a plate of zinc immersed in water. Let us consider what takes place when the wires are connected—in other words, when the circuit is completed. The water is decomposed and split up into its constituent elements.

In plain words, the atoms of hydrogen are torn from the atoms of oxygen, for water is a chemical combination of the two gases, hydrogen and oxygen. The oxygen atom does not remain in the free state and escape as gas. There is something in the water which has a strong affinity for oxygen viz., zinc. So eager is the zinc to unite with the oxygen, that it doesn't give the gas time to escape, but seizes it, as it were, and another substance or compound is formed called oxide of zinc. That is what becomes of the oxygen of the water. Now let us turn our attention for a moment to the hydrogen. Will that gas combine with the copper in the same way as the oxygen did with the zinc? No. It finds its way to the copper plate and sticks to it in the form of little bubbles. Now comes the much-dreaded formula, or chemical equation. Don't throw the paper down in disgust, but bear with me a little longer and I will make it all clear and simple.

The equation is written in symbols, a sort of chemical shorthand—H stands for hydrogen, and O for oxygen. There are two atoms of hydrogen and one of oxygen in a molecule of water. Zn means zinc, and Cu copper.

H₂O is the formula for water. You may write it OH₂; it makes no difference, for it always means two atoms of hydrogen and one of oxygen—the chemical composition of water. In the simple voltaic cell you have:—

Zn	Cu	and	H ₂ O
Zinc	Copper		Water.

Or, to write it in a professional style, before contact,

Zn	OH ₂	Cu.
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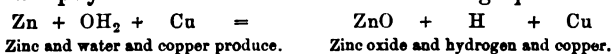
After contact, or when the wires are joined, the symbols stand thus—

ZnO	H ₂ Cu.
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* A list of the technical words used in this article, with their meanings, will be found at the end.

ZnO means zinc oxide; the H_2Cu must not be taken for a compound. I have already told you that only the oxygen combines with one of the metals (the zinc), the hydrogen remaining as gas, and sticking to the copper plate.

I hope you will now understand the following equation:—



Having given me your kind attention thus far, I think I ought to release you for the present. If you will thoroughly grasp the few first principles I have endeavoured to make clear to you, the rest will be comparatively easy, and you will have no difficulty in understanding the more complicated batteries now used in the Telegraph service; and when you begin to take an interest in the scientific part of your work you will rise in the esteem of your superiors, and soon learn to realise the force of the old proverb that Knowledge is power.

ATOM: An ultimate particle of matter incapable of further division.—COHERE: To stick together.—ELECTRICITY: From the Greek "Elektron," amber, because the property was first discovered in that fossil gum.—EQUATION: The expression of the same quantity or value in different terms.—FORMULA: A prescribed form, rule, or model.—GALVANOMETER: An instrument constructed for the purpose of detecting feeble currents of voltaic electricity.—HYDROGEN: A colourless, tasteless gas, which, combined with oxygen, produces water.—MOLECULE: A small particle of matter. A molecule means strictly the smallest quantity of an element or a compound that can exist in the free state, probably in most cases consisting of two atoms.—OXYGEN: That elementary gaseous body which gives to air its power of supporting respiration and combustion, and which by its union with hydrogen forms water. A colourless, tasteless, inodorous gas, which exists in the atmosphere in the proportion of 21 parts to 79 of nitrogen, by measure.—OXIDE: A compound of oxygen without the properties of an acid, as the rust of iron.—TECHNICAL: Relating to art or science, or to a particular profession.—TELEGRAPH: From the Greek "tele," afar off, and "grapho," I write. An instrument for conveying intelligence by signals.

LOVE-MAKING BY TELEGRAPH.

BY THE EDITOR.

IF electro-biologists compare the brain to a galvanic battery made up of a countless number of microscopic cells, why may we not compare the thinking organ to a huge compound magnet, possessing opposite polarity in the opposite sexes, and thus account for the attractive influence of women over man, and *vice versa*. The fact that electricity and magnetism are intimately related to each other is indisputable. The motion of a magnet always produces electricity—the transference of electricity never fails to produce magnetism. The two forces are, indeed, only different phases of the same agency; therefore, if we admit that the brain is a generator of electricity, it is quite as feasible to believe in its magnetic influence; and the subject of "Thought-reading," which has been discussed in the pages of the *Nineteenth Century* and other journals, in part confirms the hypothesis.

I know that my theory will be deemed wild and fanciful; but this is neither a psychological nor a physiological study; this sketch comes under the category of "Love Stories;" therefore, if I take a few liberties with science, I shall not be a fitter subject for ridicule than the great philosopher who said that life was first brought to our planet from some other world carefully entombed in a falling meteor!!!

Let it be granted that we are the possessors of a magnetic apparatus. Then, who will deny that the fair sex have the maximum amount of attractive energy? Say that the

ladies are charged positively and the gentlemen negatively, they only obey the natural laws of attraction and repulsion. In magnetism like poles repel, unlike attract. Very few gentlemen feel an irresistible desire to kiss one of their own sex; and I have always maintained that when two ladies permit their lips to make contact, the sensation produced is nearer akin to repulsion than attraction.

I once heard a kiss from one of the same sex as the recipient compared to a sandwich, minus meat and mustard; and, although our neighbours across the Channel do a great deal of unisexual osculation, I doubt whether they feel much pleasure over it.

I have propounded my theory: now for its application. Place a young lady in the same house with one of the opposite sex, and the chances are that they soon fall desperately and hopelessly in love; or, to qualify my statement, I will admit that in the majority of cases the male will be the first to succumb to the magnetic or whatever influence it may be. But close proximity is not a *sine quâ non*. Do we not often hear of romantic young swains being struck down by the so-called Cupid's dart, shot from the grand-stand of a race-course to the human target at the opposite side of the enclosure; from the stage to pit, box, or gallery; across the cathedral aisle; from platforms at railway-stations; and many other places where the sexes are separated by yards of space and intervening obstacles?

All this you will readily admit, dear reader, for perhaps you are still sighing at the recollection of that lovely girl whose penetrating eyes flashed at you from a barouche last boat-race, or you may not have quite recovered from the effects of that powerful battery of feminine beauty in last year's pantomime at Old Drury. You may, indeed, accept my theory so far; but will you go still further with me, and admit the possibility of a lady's magnetic influence defying space, overcoming the resistance of hills, dales, tunnels, brick and stone buildings, and being felt in a dingy office 200 miles away; or will you set me down for a lunatic if I state that a *grande passion* has been excited when the stimulating influence was 500 miles off, and when the lady and gentleman had never seen each other, nor heard one another's voices—for the telephone was not then practicable? Will you believe it possible for Cupid to do his work effectually BY WIRE, and without his two most powerful allies—Vision and Touch? Does it not seem absurd that a man should fall in love with a lady whose voice can only be represented by the monotonous clicking of a steel bar, and whose waist cannot be clasped nor her form made visible even with the aid of a Rosse telescope! What mysterious power can compensate for the loss of all that makes courtship so delightful to us mortals? The only answer I can find is *the magnetic influence* that must be the power "whose sway

Angels' souls adore,
And the lost obey,
Weeping evermore."

And be the gentleman in Birmingham, Liverpool, Glasgow, or Dublin, and the lady in London, he must, if he is constantly near the conductor, succumb to her attractive spell.

Some years ago, before the transfer of the telegraphs to the Government, there lived in a place I will call Cotton-town a mild, inoffensive young man, who was a clerk in the service of the — Telegraph Company. He was just the sort of youth to realise the top row of figures on Cassell's "Popular Educator" advertisement placards, headed "What will he become?" Like the good young man figured on the poster, he belonged to a Literary Institution, and he was fairly on the road to an honourable old age.

This model youth was in charge of a wire, at the other end of which was one of his own sex, and all went well

with him. From morn till night he hammered away at his Morse printer, despatching messages with the celerity of a skilled telegraphist, and chatting pleasantly with his unseen *confrère* when the wire was clear.

He made such rapid progress that one fatal day the office superintendent promoted him to the London wire, and in due course he took charge of the metropolitan circuit.

At the London end of the line was a young lady, very talkative, like most damsels, and even-tempered, unlike the greater portion of her sex. She was curious to know all about her new colleague; and, after the heavy part of the first day's work had been got through, she asked a number of questions, to which our model young man answered with his usual simplicity and artlessness. They soon became great friends, and conversations between these two young people, 200 miles apart, attracted the attention of the clerks at Irontown (the intermediate station), and they often heard (in Morse language) such tender expressions as "Thank you, dear," and "All right, love," following ordinary commercial messages between London and Cottontown.

Of an evening, when all was quiet and telegrams were few and far between, the dialogues increased in length and ardour—and—they fell in love! Cottontown popped the question. London consented, and they all but named the day.

Foolish was it? and blind, too? Well, folly is love's prerogative and blindness its chief attribute. The London telegraphist pumped the Lancashire lad to a pretty good tune, and received *by wire* a faithful portrait of her beau. *She* was satisfied, and had no desire to see her bargain before she telegraphed her final — — — — —*; but Lanky was anxious to know what his *Dulcina* was like, and whether she was all his fancy painted her. Times out of number he asked for a photo to be sent by post—as often was he put off with an excuse. At first, she had never had her portrait taken, she would go the next day and sit for him; then the weather was too dull; or her mother fell sick, or her father met her when she was off duty, and insisted on seeing her home, and watching her movements as if he suspected something. There was always some reason why she couldn't comply with his very natural request. At last he summoned sufficient courage to ask her what she was like—and, oh! how shall I record the piece of treachery that was enacted on that occasion?

It was in the evening, between seven and eight; the line was quite clear, and the lovers were wiring the most ardent expressions to each other. In this little domestic drama, played upon a gigantic stage, embracing several counties, the preceding scenes had consisted of an uninterrupted duologue, but now the villain of the piece appears. The two juvenile characters occupy the Middlesex and Lancashire ends of this big stage, and the "heavy" man enters in the centre, selecting Warwickshire for his position in the drama. He is sitting in his office at Irontown, listening to every word that passes between the lovers, when the gentleman asks the lady what she's like, beginning with, "Are you fair or dark, dear?" The villain rushes to the switch, cuts the wire, turning Cottontown on to one instrument and London to another. He then answers the question, and the following dialogue is wired.

Irontown (for London).—"I am very fair, love. My hair is golden, and my eyes are blue."

There is a pause, and the wretch at Irontown suggests to a clerk, who has just dropped in, that Lanky is too overcome with rapture to reply at once. At length, Cottontown says, "How lovely you must be!"

Irontown (for London).—"Well, they do say I am nice-looking."

Then to London for Cottontown.—"Oh, how glad I am! I like pretty girls." Another pause, and the enraptured youth at Cottontown receives this message:—"Then I am yours, love, for ever." At this moment, a telegram from the counter is handed to the wretch who is deceiving the two lovers, and "M.Q.*" is given to both London and Cottontown. In short, Irontown imitated to a nicety the sending of the lady, and the smitten youth was so enchanted that he wrote to the Secretary that very night for a week's holiday to enable him to rush to London and clasp his golden-haired darling in his arms and hear her natural voice, which he fancied would be far more musical than the armature of the Morse apparatus which had talked to him so lovingly that evening.

A few days later, with a fortnight's pay and his savings in his pocket, our hero started for the great City, and reached Euston between 6 and 7 p.m. With a thumping heart, he hastened to the Central Telegraph Office, and arrived at the main entrance just as the ladies were being relieved by the night staff and going off duty. He could not pick out his treasure from among the long line of beauties, as they descended the steps of L.Y. (now T.S.). But he told his love before he started that she would know him by a bunch of moss-roses in his button-hole, and a silver-headed cane, with a bit of red ribbon tied round it, in his hand.

After waiting some minutes in trembling expectation, a gaunt figure approached him, bowed politely, and pronounced his name.

"I am waiting for Miss Dash," exclaimed our hero. "Do you come from her? Where is she?"

"I am Miss Dash," replied the figure, in a voice not at all silvery, and less musical than a Morse printer.

Lanky stared at her with dismay, and this is what his eyes feasted upon: No golden tresses, but thick, black hair; black eyes, a tawny skin, a *sou'woner* of black down on her upper lip, high cheek-bones, and a powerfully-built frame, which contrasted strangely with Lanky's diminutive figure.

When the youth from Market-street, Cottontown, recovered his speech, he faintly uttered, "I've brought you some Eccles cakes, a packet of toffee, and a pound of parkin," and presenting the parcel, he added, in the language of the immortal bard, "Sweets to the sweet" and made such a grimace as the lady received his offering that it was lucky he turned his head at the moment, or she might have taken offence. After an awkward pause, poor Cottontown proposed a walk, which was eagerly agreed to by his Telegraphic love. The pair sauntered down Cheap-side, round St. Paul's Churchyard, and through the Strand, Miss Dash doing all the talking, for Lanky's tongue clove to the roof of his mouth every time he tried to pay a compliment. He made all sorts of excuses and tried to get rid of his bargain; but his efforts were in vain, for the magnetic influence had done its work.

Being an honourable youth, he kept the promise he had made by wire, although he felt a little angry about the "golden hair" and "blue eyes," little dreaming that the Warwickshire villain had done all the mischief—in short, he married "London." The lady made the best of wives, and they are a happy, thriving couple, with a pair of bright lads who are now in the Postal Telegraph Service, and will, no doubt, some day have to submit to the same kind of attraction that drew their parents together, for they are both in the provinces in charge of wires leading to "T.S." and presided over by two fascinating damsels, who are sure to exert their mystic influence, and end in making LOVE BY TELEGRAPH.

* Yes.

* Wait.

Notices to Subscribers.

"THE TELEGRAPHIST" PRIZE STORIES.

A prize of ONE GUINEA will be given to the author of the best Sketch of Life in the Telegraph Service. Contributors must write on one side of the paper only, and no sketch must contain more than 2,000 words.

The stories must be light, interesting, and free from dry official details, or attacks upon the heads of departments. Three stories will be selected and published, and the Guinea awarded to the author who receives the largest number of votes from the readers of THE TELEGRAPHIST, who ought to be the best judges.

"THE TELEGRAPHIST" EXCHANGE COLUMN.

Free advertisements will be inserted for Clerks who wish to be transferred to other towns.

Editorial Notes.

WE regret to have occasion to record two cases of official obstruction, and it grieves us to learn that the right feeling does not exist between telegraph clerks and Post-office men. One correspondent informs us that the "two branches never fraternise." Another writes:—"Although I only submitted one of the two prospectuses sent me, I was 'carpeted,' and closely questioned as to the why and wherefore of such an act of presumption, and informed that there was a very great objection to the introduction of anything of the kind, and more especially by any of the officers of the establishment, however innocent such prospectuses might appear to the individual."

* * *

WE were not aware that an Inquisition existed within the precincts of St. Martin's, and we feel assured that neither the Postmaster-General nor the Secretary of the G.P.O. would countenance such absurd attempts to intimidate the staff and interfere with the liberty of the press. Indeed, we have to acknowledge the courtesy of the Secretary, who replied to our request for permission to publish certain official instructions for the use of telegraphists with unusual promptitude, and enclosed a copy of the paper we desired.

* * *

At the W.C. District Office we were informed that no prospectuses could be distributed among the letter-carriers without the Postmaster's permission. We wrote to that official, who evidently considered the claims of his staff beneath notice, for he did not reply. As we have received no communication from the superintendent of the instrument-room at the W.C.D.O., we presume that the telegraph clerks have the same wholesome dread of their superior.

* * *

WE feel obliged to mention these facts, because the majority of postmasters and telegraphists have given us their cordial support. The number of subscriptions received before the issue of the journal, and on the faith of the prospectus alone, has exceeded our most sanguine hopes. The large towns have liberally responded to our appeal. Every post brings us piles of congratulatory letters, and P.O. clerks in the remote corners of the United Kingdom have sent in subscriptions immediately on the receipt of our circular.

IN thanking the many ladies and gentlemen who promise us their support, we must not forget to acknowledge the kindness we have met with at the hands of the telegraph Superintendents of the Midland, Lancashire and Yorkshire, North British, London and South Western, and London, Chatham, and Dover Railways. These gentlemen have franked our prospectuses over their lines. The secretaries of the foreign telegraph companies have rendered valuable aid and forwarded to us lists of their *employés*. The railway telegraph superintendents of the G. W. R. and L. & N.-W. R. refused to have our prospectuses distributed over their lines, so we sent them by post. The Secretary of the Eastern Telegraph Company treats us with silence, but the clerks at all foreign stations *will* hear of the TELEGRAPHIST, notwithstanding.

* * *

WHILE commenting upon the coldness of two or three of the "big-wigs," our readers must not suppose that it is the intention of the proprietors of this journal to stir up strife and raise a monster to oppose the powers that be. On the contrary, our object is to establish a medium of intercommunication between telegraphists and P.O. officials; and we hope in time, if not at once, to obtain the support of the principals of the various departments as well as the clerks.

* * *

IN spite of the few obstacles put in our path—and did we not expect them?—the circulation of our journal promises to be very large for a class organ; but if the clerks really wish us to succeed in our efforts, they must "do their level best" to introduce us to their relations, friends, and all who take an interest in the service.

* * *

WE have had a considerable number of letters from clerks at sub and country offices complaining of the unkind treatment they often meet with from the operators at T.S. They say that many a beginner has lost a situation through the impatience and want of feeling of the clerk at the Central. One young lady writes, "I could read and send well enough when I first entered an office to be tried on the sounder, but when the clerk at T.S. discovered that I was a stranger, she wouldn't receive a word from me, but kept on sending — — — — and 'Get clerk.' The postmaster, who didn't understand the instrument, believed me to be incompetent, and declined to engage me. A week or two later I accepted a situation at a very busy office, and, fortunately, this time T.S. was very nice and I gave great satisfaction." This should not be. We know how irritating it is to send to a slow reader when one has had long experience, but old telegraphists ought not to forget that *they* were nervous beginners once, and they should learn to practise a little toleration. Many a poor girl has lost a situation because the clerk at the other end of the wire would not make allowance for nervousness and inexperience. We feel sure that the ladies who give way to these outbursts of temper when they work with beginners would not rattle up quite so much if they knew that a fellow creature's bread and butter sometimes depended on the issue of the quarrel.

BANKRUPTCY OF MR. JOHN KENT, PROPRIETOR OF THE CENTRAL TELEGRAPH SCHOOLS.—The following is from the weekly record of bankruptcies, &c.:—Kent, John, Railway-approach, London-bridge, and Benbow-road, Hammer-smith, auctioneer and proprietor of telegraph schools. Oct. 24. At H. E. Kisbey's, solicitor, 108, Cheapside, Nov. 10, at 1.

“T. S.” Items.

“T.S.” has lost one of the belles of the E division. Miss Dufton, daughter of the celebrated billiard player of that name, left the service a short time back to enter the matrimonial state. —————

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THE CENTRAL TELEGRAPH DINING CLUB.—At the half-yearly meeting of this Club, held on Wednesday, Nov. 14, the members unanimously determined to effect a complete change in the management, owing to the unsatisfactory result of the half-year's trading. The club, which has great facilities given by the Department in the shape of free premises, gas, waiters, &c., is unfortunately a financial failure. Food of a very poor quality is supplied to the staff, at a charge which compares unfavourably with many ordinary restaurants. Yet, after taking £4,000 during the half-year, the net result is a £60 loss. With a large increase in the takings, and no reduction in the tariff, such a result is unprecedented, and it is to be hoped that the change may have a very beneficial result not only in the quality of food, but also with benefit to the funds of the club. Members of the service having had acquaintance with this station, will probably be glad to learn that the bad cookery, which has so long been a standing grievance at T.S., will have a very good opportunity for improvement shortly, for, upon the completion of the new floor now being added to this office, the staff will vacate their present unsavoury quarters in the basement to a dining-room on the new floor, which is said to be a great improvement. I am sure all the staff will join in the wish that “the change may remedy the evils so long and so patiently suffered.”

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THE ST. MARTIN'S DRAMATIC CLUB.—The members of this club will give their seventh performance at the Ladbrooke Theatre, Notting-hill, on Saturday, Dec. 1, 1883, commencing at 7 p.m., with Suter's comedy, “Test of Truth,” to be followed, at 8.30, by Palgrave Simpson's romantic drama, “Time and the Hour.” Front seats, 2s.; second seats, 1s. Doors open at 6.30. Book for Notting-hill station.

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ELECTRIC BICYCLE AND ATHLETIC CLUB.—The third cross-country run of this club took place on Saturday, Nov. 17, from the Greyhound, Dulwich. Five members and two friends had a very enjoyable run of about six miles. Further fixtures not being definitely settled, they will be published in our next. The annual dinner will take place on Dec. 15. The concert will be in January. The annual ball will take place at the Holborn Town-hall early in February.

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ELECTRIC FOOTBALL CLUB.—Hitherto this club has not been very successful in its matches, but as it is only in its infancy, it is anticipated that a very good team will be produced out of the excellent material in the club. In the Cup tie the club was drawn against the Morton Rangers, who, playing well together, won easily.

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ELECTRIC CRICKET CLUB.—This club is to be congratulated on the past season's success, as, out of seventeen matches, it has won nine (one being drawn in its favour). Messrs. Miell, Partridge, Howie, Murdoch, Lorns, Wilde, and Cobb distinguished themselves with the bat, and

Messrs. Miell, Wilde, Cobb, and Higley in bowling. At the yearly meeting, Mr. Miell was re-elected captain for the ensuing season, and was presented with a bat bearing a suitable inscription on a silver plate, for the highest average in batting and bowling during the past year. The annual dinner of this club will take place on Nov. 30, when about eighty are expected to sit down, and everything betokens a most enjoyable meeting. The captain is well-known in the county of Hampshire for his bowling abilities.

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THE SHOOTING IN PALL MALL BY A TELEGRAPHIST.—We are pleased to learn that Mr. Moriarty, the gentleman who, during a fit of temporary insanity, wounded Mr. Hwfa Williams, in Pall Mall, is slightly better, and on Saturday last recognised his sister. Mr. Moriarty has been employed at the Central Telegraph Office for thirteen years, principally on the news wires. He is well known and much esteemed by his fellow clerks, and he has their cordial sympathy in his illness, which up to the moment of the almost tragic event had never been observed. The sad occurrence is all the more to be deplored on account of Mr. Moriarty's widowed mother, who has been solely supported by her son for many years. The Editor of the TELEGRAPHIST will be pleased to receive subscriptions from sympathisers, and the amounts collected will be added to the fund now being organised in his behalf at his own office.

Provincial Items.

BRISTOL.

THE advent of the TELEGRAPHIST will be hailed with great satisfaction in Bristol. The necessity of an organ of our own has long been felt, and its value cannot be too highly estimated. I would remind readers that the success of the journal depends in a very great measure upon themselves, and I would therefore urge telegraph clerks throughout the country to co-operate with the enterprising projectors by becoming not only subscribers but contributors also.

The journal will be devoted entirely to the interests of this important department of the Civil Service, and I trust its columns will ever be open for the ventilation of grievances which, unhappily, have a real existence.

It may be interesting to many to learn that Mr. Cullum's visit to Bristol last summer with his excellent fife and drum band, composed almost entirely of telegraph messengers, has resulted in the formation of a Post-office brass band in this city. Having successfully appealed to the merchants and gentry of Bristol for funds, the sum of £400 was raised with very little difficulty. The band (thirty in number) is now receiving instruction under a competent leader. I hope to have the pleasure of announcing their *début* at some future date in the columns of the TELEGRAPHIST.

THE arrival of the worthy Superintendent of Paddington with his youthful musicians caused some excitement here, especially on Sunday afternoon, when the letter carriers and telegraph messengers turned out *en masse* (about 350), headed by the band, and proceeded to the Cathedral, marshalled by Drum-Major Lahee and Sergeant Ball, inspectors of messengers, the band playing sacred music. It was a novel sight, and attracted thousands of spectators to the line of march, the Cathedral itself being thronged. The anniversary of the great philanthropist, Edward Colston, was celebrated here on Nov. 13. Three

great banquets were held by three influential charitable societies, each cherishing different political views. The collections of each society after dinner for charitable purposes exceeded £1,000. This is an occasion when the resources of the Bristol office are taxed to some extent, as the speeches of great politicians are despatched all over the country, to the tune of about 50,000 words. In conclusion, I wish your journal every success. *Delectando pariterque monendo.*

DERBY.

IN view of the sixpenny tariff (which, as most of your readers are aware, is to be inaugurated on Oct. 1 next), extensive alterations are to be enforced at this centre; several new wires are to be erected, and portions of the existing accommodation are also to give way to more expeditious apparatus. It is perhaps rather premature to speak of the changes this new development will entail, but doubtless the staff will be considerably augmented, and the offices brought into more prominence.

EDINBURGH.

IN this district the advent of the TELEGRAPHIST is being looked forward to with an amount of interest and curiosity which goes far to prove that a periodical of the nature indicated in the prospectus is, undoubtedly, a desideratum. There may be some difficulty in satisfying the somewhat varied and exacting requirements of the telegraph staff; but a journal conducted on the lines which have been laid down ought to meet with general approval. In the belief that the TELEGRAPHIST is calculated to be of much benefit to those engaged in telegraph work, we heartily wish it every success and a long and prosperous career.

ELECTRIC GOLF CLUB.—The Monthly Medal competition of the Golf Club in connection with this office was played over Brunsfield Links on the 13th inst. (two rounds of the Green), resulting in a tie between Mr. J. Davidson (69) and Mr. J. Richardson (79)—10 off 69. The tie was played off the following day, when Mr. Davidson got possession of the medal for the ensuing month.

GLASGOW.

IT may interest readers of the TELEGRAPHIST to know that Mr. Alexander Kettles, one of the superintending officers on the Glasgow staff, has been elected a Commissioner of Govanhill, a flourishing burgh in the vicinity of Glasgow.

LANCASHIRE AND YORKSHIRE RAILWAY.

GENERAL gratification has been expressed amongst the clerks of this company at the prospect of the immediate appearance of an organ specially devoted to the interests of telegraph clerks, and expectation that it may worthily represent them runs high. It is to be hoped that they, together with their fellows, may not be disappointed. The electrical literature hitherto published has been beyond the "ken" and time of the common run of clerks, and has, therefore, appealed only to the scientific few; but this is to be so no longer, and we are glad that at last the social aspect of our life will receive attention.

IN matters electrical we are endeavouring to keep up with the times. The dear old, but out-of-date, drop-handle instrument, so long the pet of the railways, has gone to the wall with us, and it is a case of the "survival of the fittest." We are using an improved form of Bright's Relay, the main feature of which is the all but total absence of regulating which was such a tiresome, irritating,

and almost momentary duty. A small adjustable magnet acting on the Relay tongue takes the place of the adjusting thread in the old instrument. Wherever a Relay and a needle instrument are fixed in the same office a simple switch is also fixed which enables the clerk to reverse his circuit and to take the calling station's message from the bell, which he would otherwise have taken from the needle. This is a convenience much appreciated by the clerks.

WE have two literary societies circulating scientific papers, and it would be well if clerks generally were aware of the great benefit they could obtain from the perusal of current literature bearing directly on our profession. Half-a-dozen clerks for a few pence weekly can, now that postal facilities are so great, form a little circle, and purchase and send to each other papers in which they will obtain the latest electrical information.

A TELEGRAPH messenger named J. Phillips met with an accident at Accrington on the 19th ult., which resulted in his death. The lad was walking on the ends of the sleepers, with his back to an approaching passenger-train, and although the driver sounded his whistle, he took no heed, and was struck on the head. At the inquest, a verdict of "accidental death" was returned.

LEEDS.

MRS. TRENAM has lately presented her "lord" with another boy; this makes number eight living. Unfortunately there has been no corresponding increase of salary for many years past.

WE regret to hear of the continued ill health of Mr. W. H. Nettleton (old Nett); he is again off duty, and his place is being supplied by Chief Constable Metcalfe.

THE recent Liberal Conference produced a lot of press work; 400,000 words were actually transmitted. Mr. Bright's speech was got off splendidly.

THE sixpenny tariff is estimated to add about 30 per cent. to the number of circuits and staff at Leeds, and considerable re-arrangement of the Instrument-room will be necessitated.

MISS WILDE has been nominated to a vacancy at Whitby. The marriageable portion of the male staff are inconsolable.

MISS TODD is in negotiation for transfer to Edinburgh. It is said she has no connections or friends there, and has never even been in Scotland, but she is irresistibly attracted towards it by the study of her favourite character, Mary Queen of Scots.

MR. CROSS, engineer's storekeeper, is also transferred to Edinburgh, to replace a gentleman whose name has slipped my memory. He comes to Mr. Chambers as an extra inspector, and is to be stationed at Bradford.

THERE is to be a big *soirée* in January. A committee are already hard at work making arrangements.

A DARING fraud, on a somewhat extensive scale, was successfully perpetrated by a Leeds gang on the Cambridge-shire day. Fictitious result messages were handed in at Newmarket just as the race was being run. And two of these being addressed as from the "P. A." to Leeds newspapers, great confusion ensued, during which the "legs" reaped their harvest. What was Mr. M. and his staff about, to accept messages which were forgeries on the face of them?

LIVERPOOL.

GENERAL POST OFFICE.—The only event of telegraphic importance which has taken place in this office within the last few weeks has been the appointment of a female medical officer to attend to the ailments of our large

female staff. Miss Lucy Cradock is the lady whom our good but slightly crotchety Postmaster-General has been pleased to send us. She is well qualified, being a licentiate of the Kings and Queens' College of Physicians, Ireland, and personally she appears to be liked by the staff. Nevertheless, the appointment has caused much comment, as the greatest confidence was reposed in the skill and discretion of her predecessor, Dr. Rich.

ANGLO-AMERICAN CABLE COMPANY.—Some time ago a young man entered the office of an Atlantic Cable Company in Liverpool, seeking employment. As is usual in such cases, he was asked to give a sample of his skill, and was told to write down what was sent by a distant station. After much study and careful consideration he showed the following as the result of his labours: "Efor ggopking coallieri accidem at Gariaston this morning Jass outh acup philter magterat agin pitat pags Briggetjarams on was kaiadiieg." What had been sent was: "Shocking colliery accident at Darlaston this morning. James Southall, charter-master at a gin-pit at James Bridge, Darlaston, was killed." As far as we know, he is still looking for a place where his genius will be able to shine forth!

THE CABLE COMPANIES' OFFICES.—There are five offices in Liverpool belonging to the various cable companies. Perhaps a short sketch of each will interest our readers. The Anglo-American Telegraph Company opened an office here eight years ago, at the time the Direct U.S. Co. was about to open in opposition to the older company. Previous to this, the cable work was done on a special wire from the Anglo Company's London office (LY) to Liverpool Exchange (LX) in the daytime, and to the head-office (LV) at night. The office, which is in the basement of A, Exchange-buildings, is open from 6 a.m. until 10 p.m., and on Sundays for two hours morning and evening. Double-current Morse instruments are used on wires to London and Manchester. The Superintendent (J. Edwards, Esq.) has held that position for about a year. The staff consists of the following operators and check clerks. (The name of the last Post-office each clerk was employed in is given in parentheses):—J. Gaman (Swansea), G. Jackson (Liverpool), J. Hodgkinson (Liverpool), O. Davies (Birkenhead), W. Durward (Glasgow), E. Hopkins (Cheltenham), and Owens. The office has lately been put in thorough repair, and is now one of the most comfortable offices here.

MANCHESTER.

G. P. O.—The intimation that a journal was about to be published, solely for the benefit of the British Telegraphist, was received in Manchester with much interest. The want has long been felt, and there have been indications that support would not be lacking towards such a publication. On its arrival it will, no doubt, be read through and through, commented upon, and criticised—for in affairs appertaining to their own body the telegraphists are very critical—and if it gains their appreciation, one may safely predict its success. In the intervals between messages the operator has a vast amount of spare time; and we know that he chiefly spends this in (what is termed) *light* reading—the perusal of literature which requires no mental labour, and generally that literature which is the easiest obtained. Probably no class are better informed, inasmuch that by a certain section of their work they are bound to gain a smattering of the most important and interesting events of the day. Still there are many—and it is to be hoped a great many—who would welcome a journal which, uninfluenced by any political faction or by any party sway, elucidates general questions and great principles, and also

would recognise the boon in having truth, however severely it might strike, unflinchingly laid before them by a journal devoted exclusively to their interests. Then, again, it is an advantage to possess a medium by which we may communicate our episodes, little in themselves, but nevertheless of interest to all telegraphists—a medium thoroughly in harmony with our pleasures and pastimes, and entirely in sympathy with our likes and dislikes. The hearty wish in Manchester is that the journal will satisfy the fastidious ones, and at the same time instruct and elevate the minds of all its readers. No staff will hail with greater pleasure a means which will acquaint them of their fellow-clerks' circumstances. They take a lively interest in, and do their best to create a good feeling with, their distant co-operators.

PROMOTIONS.—The post of chief superintendent of telegraphs in Manchester, rendered vacant by the retirement of Mr. John Hall, has been conferred by the department on Mr. R. W. Mason, who has been in the service as assistant superintendent for many years. Previous to the transfer of the telegraphs to the Post-office, Mr. Mason was in the service of the British and Irish Magnetic Telegraph Company.—Charles Northover, C. H. Marsden, and J. Fletcher, from the second to the first class of telegraphists.

APPOINTMENTS.—D. J. Chapman, A. Wildgoose, — Ridway, and F. Fergusson, as sorters and telegraphists.

THE ELECTRIC LIGHT.—It is understood that the electric light is shortly to be brought into use at the Central Office, York-street, Manchester. This will be a great benefit to clerks in all the five instrument-rooms, as at times the heat from the gas is almost unendurable. After the females are off duty at 8 p.m., the use of gas will be resumed.

TAMPERING WITH TELEGRAMS AT MANCHESTER.—At a meeting of telegraph clerks, held in Manchester on Nov. 17, it was decided to grant 12s. 6d. a week to the wife of E. Garside for a period of six months, and also 17s. 6d. a week to the wife of S. Lamb for a period of twelve months. It will be remembered that Garside and Lamb were committed to prison, at the last Manchester Assizes, for six and twelve months respectively for intercepting telegrams. Mr. Thornley was appointed treasurer, and Messrs. A. Warren, Garnett, Mansell, and J. Jackson collectors. The female portion of the staff guaranteed to subscribe 10s. weekly towards the amount required.

NEWCASTLE-ON-TYNE.

A MUTUAL Improvement Technological Class has been formed here. The first meeting was held on the 14th of November, when an interesting lecture was given by Mr. Taylor, the President, on Electrical Terms. The class numbers sixty members, and papers will be read or lectures given on the above subject by several members of the staff during the session.

NORTHAMPTON.

On the occasion of your first issue we think the following item will not be without interest to your readers. We refer to the "Northampton Post-office Sick Fund," which was inaugurated on Oct. 6, 1882, the weekly contributions being then, as now, 1½d. per member. The amount paid in sickness was 3s. per week until 1875, when it was increased to 5s., and in 1877, from 5s. to 7s.

The funds continuing to accumulate, a further advance was made in 1878 to 10s. per week, at which it still remains, and the fund is at present in a sound condition, numbering nearly 60 members of both branches of the service.

At the annual meeting held in November, 1882, the following officers were appointed an executive committee—viz., Mr. T. Whitney, C.C. (telegraph), and Mr. W. Morten, C.C. (postal), Trustees, Mr. W. T. Barker (telegraph) Secretary and Treasurer, and Messrs. W. T. Barker (telegraph) and Mr. J. Finch and Mr. M. Jeffery (postal).

At this meeting the secretary drew attention to the fact that when in 1878 the sick pay was increased from 7s. to 10s. per week, the fund had met all claims during the four years, the balance in hand varying only to the extent of 3s. 9½d. for that period.

We may add that several offices have applied to us for copies of our rules.

We feel sure this work will commend itself to our brother officers, and we would say to those who have taken no steps in this direction—

“Go thou and do likewise.”

YORK.

THE first annual meeting of the York Postal and Telegraph Clerks' Cricket Club was held on Saturday, Nov. 10, Mr. W. Smith, secretary, presiding. The treasurer, Mr. J. Catley, presented a balance-sheet, which indicated that financially the club was in a flourishing condition, there being a fair balance in hand. The secretary's report showed that out of eleven matches played, nine were won and two lost, the principal scorers being Messrs. Burkill, Cockcroft, F. Lawson, Merchant, W. Smith, and Cowburn. Messrs. Cockcroft, Burkill, W. Smith, and F. Lawson did most execution with the ball. Votes of thanks were passed to B. W. Seton, Esq., T. Stevenson, Esq., and others, for their donations, and likewise to the retiring officers for their services during the past season.

Colonial Items.

SOUTH AFRICA.

From the Frontier Gazette.

PRIOR to the construction of the telegraph line to Barkley East, no one had any idea of the number of messages that would be forwarded from and received here. The department is now in continuous requisition, and is one of the greatest boons ever conferred on a civilised society. It is only fair to add that the success of this branch of official life is entirely due to Mr. Percy Trenam, our esteemed telegraphist and postmaster, who by his promptitude, civility, and courtesy has given every satisfaction to and gained the confidence of the public. His services are highly valued and appreciated here. [Mr. P. E. Trenam is the eldest son of the superintendent at L. S.—Ed.]

HARRY TIFFANY, shorthand clerk to the General Manager of the Cape Telegraphs, returned to South Africa in the *Grantully Castle*, on the 16th ult., after spending three months' leave with his friends in Leeds, where he was trained.

INCANDESCENT LAMPS.—Would it be surprising to many readers to learn that incandescent electric lamps were used forty years ago to illuminate a mine? We are so accustomed to be led away by the rapid progress of the last few years as to forget the works of pioneers. Carbon in a vacuum was used in the lamps above referred to; but, of course, the vacuum was not so high as that at present used, because the apparatus for obtaining it was not so perfect.—*Electrician*.

Literary Notes.

MR. CHARLES READE's many admirers will regret to learn that the distinguished author of “Never too Late to Mend” has been advised to quit this land of fogs and cutting winds for a more genial climate. It may not be known outside Mr. Reade's private circle that the long and wearisome rehearsals of “Love and Money” at the Adelphi a year ago, and the draughts which cannot be excluded from the stage of a big theatre, were the primary causes of a serious illness from which Mr. Reade has not yet recovered. Those who know the gentleman intimately will feel his absence keenly, and no one more so than the Editor of this Journal, who looks forward to his return in the spring with intense pleasure. Mr. Reade is still in harness, and writing a novel to be published at the beginning of the New Year. Neither time nor sickness has weakened his great intellect. The lamp of his genius burns as brightly as ever, and his pen is always at the service of the suffering and oppressed. Let us hope that his sojourn in the South of France will invigorate his frame. His mind needs no restoration.

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WE have received from Messrs. Wyman & Sons two of their excellent Technical Manuals,—“Spelling and Punctuation” and “The Youth's Business Guide.” The former will be invaluable to the aspiring young authors we hope to hear from, and the latter is a work which ought to be placed in the hands of every youth who does not happen to be born with a gold or silver spoon in his mouth. It must not be supposed that “Spelling and Punctuation” is an ordinary school-book. It is a manual which was prepared by the late Henry Beadnell, who was for about forty years engaged as senior classical “reader” in the printing-office of the publishers. The author was a man capable of correcting the “copy” of our great writers, and in the pages of his book will be found many valuable hints which apply to the experienced Press man as well as to the literary novice. With this work, and that wonderful shillingsworth,—“Authorship and Publication” (Wyman & Sons),—the rising young author should soon be able to send presentable copy to the printer.

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IN these days of popular science teaching, almost every young man knows something of anatomy and physiology, and many consider the study of those important branches of science rather dry work. We have had comic histories of England and Rome, and now there is a comic anatomy. “Dr. Corpus's Class” (Wyman & Sons),—a series of nine lectures on the human body, from a comical point of view,—is excessively funny, and very clever. We have heard Professor Huxley on man as a machine; let us have Dr. Corpus's view of the human frame as a machine:—“It is a sewing-machine, for it is capable of mending its ways, and of giving itself a stitch in the side; an irascible man will sometimes knit his brows and ‘darn your eyes’ when he has ‘got the needle.’ In the next place it is a washing-machine,—and a very extraordinary one too,—for it can not only wash other things, but it has the remarkable faculty of being able to rinse its own mouth, rub up its memory, or, in fact, wash itself entirely.

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“It is also a wringing-machine, for a man often wrings his friend's hand; a sharp lawyer can wring evidence out of an unwilling witness; and a poacher will wring the neck of a fowl. In like manner it could be proved to be a mangling-

machine, as any field of battle could witness; a thrashing-machine, as most schoolboys know too well; a punching-machine, as anybody could testify who has had the operation performed on his head; a boring-machine, as many a weary victim finds out; and even a flying-machine, for people very often fly into a passion. There is a curious anomaly, however, connected with human machines. If they are 'screwed,' of course they are 'tight'; but whether they are screwed or 'have a screw loose,' they are equally untrustworthy." This is a sample of "Dr. Corpus's Class"; the fun never flags, and the last page is as witty as the first.

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THOSE of our readers who want something novel and cheap for a Christmas present for their little ones should send for "Merry Matches," the new round game for children published by Messrs. Wyman & Sons. It consists of a pack of cards on which are engraved artistic sketches of the leading nursery heroes and heroines. Instructions for playing the game will be found in each pack, and we venture to state that it was a happy thought of the inventor to conceive so pleasant and innocent a recreation for "Our Darlings" during the winter evenings. "Merry Matches" can be obtained through any bookseller for 1s., or direct from the publishers post-free for 1s. 2d.

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WE would draw our readers' attention to the weekly journal, *Health*, edited by Dr. Andrew Wilson, a competent judge on such a subject. There are many people who are fond of dipping into a medical work in search of the whys and wherefores of their own or other people's ailments, who only discover to their grief that a little knowledge is a dangerous thing, and that, above all, a little "medical knowledge" is apt to fill them with hypochondriacal fancies. *Health*, however, is a popular medical paper that clearly and simply touches on the common ailments of humanity, and above all, bearing in mind that prevention is better than cure, Dr. Wilson, in his valuable paper, pays particular attention to the sanitary arrangements of our households which are so often the cause of domestic afflictions.

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WE hope that not a few telegraphists will dive a little deeper into scientific lore than we profess to lead them in the pages of this paper. Those who wish to keep pace with the times without spending a lot of money in expensive books cannot do better than subscribe to Mr. Richard Proctor's excellent weekly journal. "Let knowledge grow from more to more," is that gentleman's motto, and *Knowledge* has grown from more to more to a pretty good tune. We were sanguine of the success of Mr. Proctor's paper from the first, and now we are pleased to record the fact that liberal management, hard work, open-heartedness, and real talent have met with their reward. *Knowledge* maintains the high reputation it earned in its infancy. All the editor's promises have been fulfilled, and there is a glorious future before it. We earnestly recommend Mr. Proctor's journal to the readers of THE TELEGRAPHIST.

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DALE'S ILLUSTRATED CATALOGUE.—We beg to direct the attention of our scientific friends to the new issue of a comprehensive catalogue of electrical apparatus just published by Messrs. H. & E. J. Dale, the eminent manufacturing electricians of 26, Ludgate-hill, and Little Britain, E.C. In the pages of their new book will be found much information useful to the amateur and professional electrician.

Theatrical Chit-Chat.

DRURY LANE.—"The Sailor and his Lass" is a bad play, badly mounted, and badly cast. It is a disgrace to our so-called National Theatre, and almost beneath criticism. Whilst listening to the clap-trap speeches put into the mouths of the leading characters, I could, if I had closed my eyes, have fancied myself at the old "Vic." or the Bower Saloon. It only wanted a broadsword combat and a few pans of blue or red fire to perfect the illusion. The last scene is so disgustingly realistic that it is matter for surprise that the Lord Chamberlain did not forbid its representation. Of the acting little can be said. How can artistes be judged in such parts? Mr. Harry Jackson's clever study of a London cabby saved the piece, if such trash can be saved. Miss Sophie Eyre did her best with an unthankful part. She looked picturesque, and delivered her lines with effect. Mr. Fernandez, an admirable melo-dramatic actor, gave us a taste of his quality in the last act, and earned the only genuine burst of applause awarded for emotional acting. Mr. George as the hero and other members of the company strained after effect and didn't always get it. Why doesn't Mr. Harris try the great drama of "Sweeney Todd, or the Barber Murderer of Fleet-street"? What a splendid chance for Augustus in the Oven scene? Wouldn't he "polish 'em off!" There is a part for Harry Jackson, too, a fat old beadle with a catchword, "Convulsions!" Alas, for poor old Drury and the British drama!

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THE SAVOY.—Telegraphists who take an interest in electrical matters ought to pay a visit to the Savoy if only to see how well the electric light is managed, and the beautiful effect in the last scene, where all the characters have an incandescent lamp shining in their hair. There are no duffers in "Iolanthe"; the dialogue is bright and full of wit and the music is delightful. Mr. George Gro-smith is inimitable as the Lord Chancellor; Mr. Temple as Strephon; and Messrs. Rutland Barrington and Durward Lely as the two Earls are good vocalists and experienced actors. The Queen of the Fairies is played to perfection by Miss R. Carlingford. Many a fairy queen have I seen, but none to compare with *La Reine des Fées* at the Savoy. I should like to see her in a good heavy leading part, for she acts as well as she sings. Miss Leonora Braham is too old a favourite of the public to need comment.

* * *

THE AVENUE.—If, after a weary day at T.S., you want the cobwebs of your brains swept away, and long for a hearty laugh, dear punchers, rappers, and tappers, go and see "La Vie" at the Avenue. If you like pretty girls, what a feast for your eyes! What gorgeous costumes and what charming voices! There may be very little plot in the opera, but there is plenty of fun and good singing, and the gentleman who "staged" "La Vie" knew his business thoroughly. From the rise to the fall of the curtain, the night I was present, the audience was screaming with laughter at Lionel Brough and Arthur Roberts's comic acting. There is nothing offensive in "La Vie," no *double entendre*, no nasty gestures. The opera is well played throughout, and the mounting reflects the highest credit upon the management.

* * *

GLOBE.—In spite of Clement Scott's attack upon Sydney Grundy, there is something in "The Glass of Fashion," and although it may not bear comparison with the work of some of our old and experienced dramatists, it promises well for the future. Mr. Beerbohm Tree acted with ease and grace as

Prince Borowaki, and Miss Lingard gained the sympathy of the audience as Mrs. Trevanion. Mr. J. L. Shine's make-up was not a triumph of art. Wig paste is cheap enough, Mr. S.; pardon me if I suggest a visit to Clarkson's for a sixpenny stick.

* * *

TOOLE'S.—In the absence of our dear old friend, J. L., who is delighting the Provincials, "Ours" is being revived with an able cast. There is a charm in all Robertson's comedies, but I do not like the introduction of the ladies in the Crimean tent scene decked in Parisian costumes. Where would the fair ones be in such a storm as appears to be raging in the last act? I am afraid their finger-tips would not be in good form for manipulating the roly-poly.

* * *

STRAND.—If you have seen the "Silver King"—and who has not?—go and split your sides over "Silver Guilt" at the Strand.

* * *

ST. GEORGE'S HALL.—Here Mr. Corney Grain continues to draw large audiences. There are many who like dramatic entertainments, but have an antipathy to the word *theatre*. I have known gnat-strainers and camel-swallowers turn up the whites of their eyes as they passed a theatre, who thought it no sin to see "Pink Dominoes" at a "Hall." Straight-laced and crooked-laced may patronise Mr. and Mrs. German Reed without fear of compromise.

Correspondence.

NOTICE TO CORRESPONDENTS.

The Editor declines to publish any letters from Telegraphists containing abuse or personalities. The name and address of the writer must be enclosed, not for the purpose of publication, but as a guarantee of good faith.

Correspondence invited from English and Colonial Telegraph Clerks. Contributions for the January number must reach the Editor before December 15, 1883.

To the Editor of the TELEGRAPHIST.

SIR,—Can any of your Sheffield readers tell me why the youth convicted at the recent York Assizes of stealing a postal order was described in the Calendar as a telegraph clerk?

We had been led to suppose that the race had become extinct in the postal service since the new creation of "sorting clerk and telegraphist" came into existence.

The lad was employed in the sorting office at the time, and should, I contend, have been described as a "sorting clerk." At any rate, if a boy from the sorting office, while learning telegraphy in the instrument room, had been "run in" for divulging the contents of a telegram, his postal superiors would have taken precious good care to call him a "telegraphist." As things at present stand, only we who are employed by telegraph and railway companies can be correctly described as "TELEGRAPH CLERK."

MR. EDITOR,—Will you let me appeal to the hundreds of telegraphists not on the establishment, who are employed as postmasters' assistants, to make your journal the medium of communication in advertising for employment. At present, the *Christian World* seems to be the recognised organ; why, I can't say, for if the two situations I have obtained through its columns may be taken as fair specimens of the *Christian World*, I should like to try a heathen paper for a change.

I would suggest that country postmasters or postmistresses in advertising should state distinctly the nature of the duty required, instrument in use, importance of circuit, and so forth; and that, on the other hand, assistants should state fairly their qualifications. Such bitter disappointments as my last experience would then be avoided.

I applied for and obtained a situation in a northern market town, nothing having been said as to ability except that "a knowledge of telegraphy was necessary." On my arrival there, I was astonished to find that the instrument in use was of a form I had never even seen before, and which I was, of course, incompetent to satisfactorily work. The postmistress herself had an unaccountable hatred of telegraphs and everything telegraphic, and I was glad to be relieved from an engagement so unsatisfactory to all concerned, the greater part of my month's salary being spent in the journey to and fro.—Yours, &c.,
ASSISTANT.

SIR,—The moment I received your prospectus I said to myself, "We have got what we want at last—a newspaper all to ourselves." Will you permit me to air a grievance in your first number? I am a female telegraphist, and I can read about thirty words a minute on the Sounder.

I was four years at the central office of one of our largest provincial towns, and my salary was 25s. a week. Some months ago my father had to remove to London, and I sent in my resignation, and left the service. After being at home a little time, I wanted to return to my work, and applied for a situation at T.S. What do you think I was offered after four years' experience? Perhaps you will hardly credit my statement when I tell you that I was asked to return at the splendid salary of 14s. a week, for no other reason than daring to resign instead of asking for a transfer to London. Of course I declined, and I am now comfortably located at a country post-office, where I receive considerably more than was offered me at T.S.

Knowing as I do how scarce experienced Sounder clerks are, I think such a rule as to make an old telegraphist begin over again if she wishes to return to the service one that ought to be abolished. What had I done? My character was good, I had resigned of my own free will, I was thoroughly competent, and I hadn't got married. Mine is not an isolated case, and the only revenge I take is to send you this letter, with the hope that Mr. Fischer will try to relax a little in favour of good clerks who wish to return to the service.

Wishing your paper the success it deserves, I am, yours respectfully,
J.
Nov. 17th, 1883.

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The Telegraphist

A MONTHLY JOURNAL FOR

Postal, Telephone, and Railway Telegraph Clerks.

LONDON: TUESDAY, JANUARY 1, 1884.

Prize Sketch.—K.

PAGES FROM MY AUTOBIOGRAPHY.

PICTURE to yourself, gentle reader, a narrow cell with walls bedaubed with yellow ochre, perennially renewed, which rubbed off profusely with the least friction, as my clothes bore testimony every day; furniture of the most primitive description—a rude stool, a slab of wood which served for counter, desk, and dining-table; a small fire-stove, which, unless fully charged, gave out no heat, and when so charged made the place insufferably hot; a paraffin lamp from the station lamp-room, which it was my daily ungracious task to clean and trim; two double-needle instruments, with a cupboard underneath for the batteries; a window, nearly monopolised by a slate upon which it was my duty to inscribe particulars of trains, in regard whereof the office more especially existed. Picture to yourself these various features, and you will have a very good idea of the first office to which I had the honour to be appointed clerk in charge—coveted distinction! It must be confessed, though, that, like Alexander Selkirk, I enjoyed the honour very much alone, without even a messenger to share my solitude and be “supervised.” The comparatively few private messages received for the village and its vicinity were delivered “specially” by any rustic that happened to be available at the time, or by man and horse.

But if the inside was not inviting, the surroundings more than compensated. Within a few yards of the door was a bed of shrubs and flowers, backed by a group of fine elms, and the long, straggling, quaint-looking street which constituted the village. Elsewhere the platforms were flanked by steep embankment, fragrant in the spring, when I came, with the perfumes of primroses and violets; and far away on every side rich green pastures dotted with trees, hedgerows, and farmsteads. A landscape very different surely from that to which the telegraphist is usually accustomed in the discharge of his duties. Dear old Y—, with its jumbled-up memories of screaming trains, oily porters, rural sports and pastimes! How the Flying Dutchman, which here attained its utmost speed, dashed through the station, spouting forth showers of burning cinders, and drawing to destruction those members of the feathered tribe which happened to be in the way—terrific sight!

I lodged at a cottage which might have been described as sacred to the memory of telegraph clerks, seeing that it had been a temporary home for them from the time the office was established. The landlady used to declare that the telegraph clerks ate more than they paid for, which I think not at all unlikely, though homely provisions were cheap there; at any rate, I believe she was right as regards myself, for I had certainly a most voracious appetite, which, stimulated by the pure country air, and the demands of growing nature, took a lot to satisfy it. Why, then, it may be asked, did she board us? The truth is, the good lady was fond of company, and her house was the scene of frequent revels, to the merriment of which we largely contributed. The village fair generally mustered in strong

force at these parties. And what a choice variety!—ranging from the buxom widow next door (I supposed she was a widow from the fact of her being blessed with a bouncing daughter) to the gay and festive Pauline, who lived at the store round the corner, and was assumed to be the belle of the village, as indubitably she was of the ball. Charming Pauline, of how many tender pangs, jealousies, and divisions thou wert the subject! What dreams I had, what visions of everlasting spring, in that merry month of Maying, the music of which haunts me still! Of course, I made love to her, and so I learned, when the purple bloom of hope had departed, had some of my predecessors. She, as is usual in such cases, vowed unchanging fidelity; but her languishing airs and insinuating manners might have impressed a less enamoured or more suspecting swain that she was not new to the business. But all's well that ends well, and the only harm resulting was a transitory sense of disappointment to me.

The country around Y— was dotted with several of those “stately homes” upon which the imagination loves to dwell and to one or other of these man and horse deliveries were of almost daily occurrence. Tradition recorded (and the incident strongly impressed my imagination at the time) an illustration of the anxiety to obtain telegraphic news from Sebastopol during that terrible siege—how on the eve of its expected fall “man and horse” were kept in constant readiness to depart at a moment's notice for the “big house” twelve miles distant, where the Squire (a retired Waterloo veteran, anxious for the honour of the army and the fate of his son), waited sleeplessly for news. And what a shout was there, what feasting and carousing, when the news actually arrived, brief and terse—Sebastopol has fallen! The old hall rang again and again, till the pictured heroes of Marlborough and Wellington, silently looking on, seemed to start out of their frames in sympathetic unison. Sebastopol has fallen! the village bells respond. The very clatter of the horse's hoofs on its homeward journey seem to take up the cry—Sebastopol has fallen! Truly a notable time. Alas, for human triumphs! his son succumbed to the rigours of the siege, and the noble house sorrowfully realised, not for the first time in its history, “That the paths of glory lead but to the grave.”

* * * * *

A striking feature of the old companies' systems of administration was the never-ceasing circulation of the staff. Single young men, and these comprised the majority of the clerks, never reckoned upon remaining at the same office (or “station,” as the term went then, “office” being purely a postal innovation) more than a year or two at the outside, and, in fact, unlike the Parish Priest who—

“Ne'er had changed, nor wished to change his place,”

did not care to reckon upon a longer period of permanence—in the absence, of course, of any special object of attraction. The advantages of this policy were greater than appear at first sight. Change meant progress in professional knowledge, and generally in material prosperity. Material prosperity! Pray don't imagine that the advances in this direction were at all startling. Oh, dear no! From two to four shillings per week represented the usual stride, without any prospective yearly increments. I must not forget the message gratuities—quite a sustenance-fund to the poor, struggling, married clerk, who had all his work cut out to make both ends meet. But the advantages were chiefly of the kind that come from travel, from change of situation, from more varied experience of matters appertaining to the profession, and from contact with the world in general. A course of education

which benefited the clerks and the companies alike, stimulating to ambition, perseverance, and (which was, of course, peculiarly the gain of the companies) contentment with small wages.

This dissertation seems necessary to explain my very brief sojourn, of a few months only, at the first office to which I was appointed.

The place to which I was transferred was very unlike that which I had left. I found myself now, for the first time, temporarily settled amid scenes of bustle and activity, for the place where I had served as messenger and learner, though having some importance as a market for agricultural stock and produce, was in other respects rather a large village than a town. But B—— was a town in every sense of the word, a parliamentary borough and thriving port to boot. It was one of those little hives (it was small comparatively) of human industry where none but workers are to be found. You saw none of those "retired" people who make so considerable a part of the life of most towns. If many resided there, they contrived most remarkably to keep out of the way; or, perhaps (like the retired tallow-chandler who insisted on coming to business on melting-days), though nominally retired, they actively participated as of yore. But I strongly suspect that those who made money enough betook themselves to

"Regions mild of calm and serene air,"

Where Nature was fairer to look upon; for there was nothing attractive about the place except its industry.

The proportions of the telegraph business were equally different in all save the matter of office accommodation, which was of that cramped unwholesome character common to E. & I. T. C. offices, for no reason that I can imagine, other than the paltriest economy. I had charge, and associated with me were a junior clerk and messenger combined in one person, and a learner, both of whom were older than myself.

There was a very considerable amount of railway telegraph business (T. A. reporting, &c.), more, in fact, than public, to meet which the junior appointment specially existed. This was rather an ambitious entrance into official life, and I felt the responsibility more than was good for my health and spirits. To add to the anxieties of the situation, there was the disturbing element of U. K. competition, which demanded the utmost vigilance and attention. There was, in fact, open and perpetual war between the two companies, and a clerk in charge's prospects in the service often depended upon the success of the tactics employed, as evidenced by the periodical returns of revenue—those dreaded monthly reports. The arts and stratagems resorted to were not always creditable to either party, but the end was held to justify the means. The commercial morality of the companies was about on a par with that of the shipbroking interest, which supplied so much of their custom, and engaged so large a measure of their solicitude. Under the Government monopoly all this is changed, but whether the public have been the gainers, except in the extension of the telegraph to unremunerative places, I should not like to determine. Competition is generally a healthful stimulus, and the rate at which, under this influence, the process of cheapening was progressing, induces the opinion that a sixpenny tariff would have been established before now.

At the time I took charge the office was comparatively old, having been among the first to be opened by the Electric Company. The fact impressed me, and I liked to dwell upon it, being much given from a child to conjuring up fanciful visions of the past. I also knew that the appointment had been held by some of the best clerks in the

service—fellows in whose footsteps it was thought, after the hero-worship of the time, a distinction to tread. The "guard-books"—and there were several—were full of curious memoranda relating to the experiences of my predecessors. Let me explain to the Post-Transfer generation of telegraphists what these guard-books were. They were large books full—when new—of blank leaves, upon which had to be pasted all memoranda concerning the affairs of the Service in general, and of the office in particular, for the guidance of clerks present and future. A clerk was bound in this way to publish whatever officially related to himself, whether good or bad. Sometimes it was a promotion that was chronicled, sometimes a dismissal—now a general instruction, and those petty cares—those fines, and injunctions "to be more careful in future"—which vex the souls of their victims. Petty cares! Ah, me! they seem anything but petty to the young heart that has no experience of real trials. As a species of various kinds of literature, full of human interest, I would back those guard-books against anything extant. "Chambers' Miscellanies" are nothing to them. Where are those guard-books now? The history—but I must stop, or I shall exceed the limit.

VETERAN.

A BRAVE TELEGRAPHIST.

A CHRISTMAS STORY.

BY THE EDITOR.

CHRISTMAS morning. The clear, frosty air is musical with bells, and all the good folks of Brent are hastening to celebrate the nativity of the Saviour. Men, women, and children, in holiday attire, line the road to the village church. The Squire leads his handsome fur-clad daughter, the well-to-do tradesman his fat wife and rosy-cheeked family; and Giles, in his Sunday go-to-meeting hat and best smock, helps along the scarlet-cloaked, rheumatically old dame who gave him birth sixty-five winters ago. How righteous they all look! and how carefully they make the most of their brass-tipped books! He would be a bold man to doubt the piety and virtuous intentions of that motley throng. Happy the nation, and happier still the priest, blessed with so many paragons of goodness. Shakespeare has said, "There's no art to find the mind's construction in the face"; another writer maintains that the face is the index of the mind. But I hold with the immortal bard; for if the hearts of those pious villagers had been bared, some of the *dramatis persone* of the "Pilgrim's Progress" would have been exposed to view. It is well for us that we cannot read the thoughts of others, or some of us would have to be differently constituted if we cared to exist. But enough of moralising; let us imitate the Devil on Two Sticks, and search Brent for a scrap of *real* goodness, a grain of genuine piety, a spark of Christian feeling, on this Christmas morning, in the breast of one who does not mingle with the righteous crowd. *All* the good folks are not at church after all. There is one poor soul with more religion in her little finger than many a priest has in his whole body standing calmly waiting for orders in a stuffy room permeated with the odour of stale apples, onions, and spices. This dingy den forms part of the Brent Postal and Telegraph Office, where villagers can be supplied with toffy, blacking, boot-laces, jam-tarts, pins, herrings, needles, and bacon, in addition to stamps, postal notes, and telegrams. Indeed, more space would be required to enumerate the odds and ends sold by Postmistress Ironsides than my story must occupy. Lucy Morton has been waiting half an hour to receive her superior's commands. Her mistress, a tall, hard-featured

woman, stalks into the room and proceeds to instruct her slave. Miss Ursula Ironsides—she is still a Miss at fifty, for where is the man with courage enough to marry her?—informs Lucy that she is going to spend Christmas at Didbury, the neighbouring town, after the morning service; and as she may not return until the next day, she hands her clerk the keys of the cupboards and drawers containing the valuables belonging to her Majesty's Government. Although she is to be left alone at this festive season, the poor girl does not let a word of complaint escape her lips. She knows her mistress too well to expect pity from her. She accepts the charge without a murmur, but the moment Miss Ironsides closes the door upon her and sallies forth to church, Lucy flings herself upon the hard, old sofa, almost as hard as the postmistress's heart, and moans and sobs herself to sleep.

Our heroine is an orphan. Her mother died in giving her birth. Her father was an officer in the 60th Rifles—a Crimean hero, but a man with little or no experience of the world. Shortly after peace was proclaimed between England and Russia, in 1856, he sold out, and having no private fortune of his own, contrived to support his family by writing for the press. Like many more journalists, he found more thorns than roses in his path, and when he died suddenly one day, his darling daughter Lucy was left penniless. Being of an independent spirit, like her father, the girl elected to earn her bread rather than burden her married sisters, although any one of them would have taken her, and endeavoured to make her comfortable and happy. Lucy steeled herself to their entreaties, and it was ultimately settled that she should seek for some genteel kind of employment, and the Telegraph Service was selected. After a few months' instruction at a school of Telegraphy, Lucy Morton searched the columns of a religious journal, and found therein this model advertisement:—

Wanted, a steady, Christian young lady to take charge of a single needle instrument and assist in postal duties. She must not object to serve in the shop, and she will be expected to make herself generally useful in the house, and occupy her spare moments with needlework. Send photograph, age, and denomination to Miss Ursula Ironsides, Post-office, Brent.

Here was a tempting offer. And Lucy, poor, inexperienced girl, tendered her services. Doubtless she was the only applicant. A week later she commenced duty at the magnificent salary of nothing a week for three months, and £8 a year if she gave satisfaction at the end of her period of probation. Eight pounds a year for postal and telegraph clerk, shopwoman, general servant, and needlewoman all rolled into one! Eight pounds a year! What a reward for skilled labour!

Why, it was worth more than that to be compelled to listen to the scandal of the village harpies. Gossip-mistress would have been a more appropriate title for Ursula Ironsides, for she read every post-card that passed through her bony fingers, and knew more about the little peccadilloes of the male population of Brent than did their own mothers and wives. Rarely a day passed without some piece of scandal being retailed and embellished at this little post-office. Many a cruel story was invented by the vile old conspirators who assembled at the gossip-mistress's shop, and more than once has Lucy Morton, all afire with shame and indignation, given the spiteful old creatures a piece of her mind when the character of a defenceless man or woman has been undergoing dissection by these skilful anatomists of human feelings.

One day an old woman, a thriving dealer in calumny, entered the shop and made a remark about the vicar, whom she had just seen in close conversation with a lady who did not belong to the clique. "Ah!" exclaimed Miss

Ursula, tightening her parchment lips until the skin almost cracked, "if his wife only knew what I know!" "Knew what, my dear?" croaked her friend. "That he was posting letters to Mrs. Flighty at Didbury!" hissed Miss Ironsides, with a look that would have put an enraged cobra in the shade. Lucy could hardly contain herself during this violation of law and honour; but, being in the middle of a message, she suppressed her anger until she got the acknowledgment, and then expressed her contempt of her mistress's conduct in rather strong terms. The wretched old scandalmongers were abashed, and the post-mistress's friend slunk out of the shop; but Miss Ironsides had her revenge on the poor girl by sending her supperless to bed.

Such was the daily life of the orphan girl in this model country post-office; but she continued to put up with indignities, humiliations, hard work, and scanty rations, for she well knew that all offices were not like this one, nor all postmistresses of the Ursula Ironsides type. She had known ladies who had found good homes, kind friends, the best of food and liberal salaries in country post-offices. So she determined to do her best under any circumstances, and leave when she felt sufficiently experienced to take duty at a more important station.

It was past one when she woke from her sleep on the hard sofa. Her limbs ached and her temples throbbed. She felt ashamed of her weakness, and tried with a sponge and some icy water to efface the traces of what she termed her cowardice. After she had eaten the mutton-chop left for dinner by her mistress—who was at that moment regaling herself with turkey, and all the etceteras of Christmas fare—the lonely girl stirred the fire, and looked about for something to read. The library at the Brent Post-office was not of a very cheerful character. On a mahogany chest of drawers was a row of old, worm-eaten books, guarded by two hideous china dogs, with huge black chains round their necks. There was a copy of "Zimmerman on Solitude," "Early Piety," Foxe's "Book of Martyrs," Sturm's "Reflections," half a "Pilgrim's Progress," "The Ladies' Pocket Book" for 1838, Hervey's "Meditations among the Tombs," an odd volume of the "Penny Magazine," "The Farmer of Inglewood Forest," a few old "Post-office Guides," "Blair's Sermons," and a dirty copy of "Pickwick," with about thirty leaves missing.

"Dear, dear, old Pickwick!" exclaimed Lucy, with such delight that the old tom cat, who was jerking out a few hoarse purrs on the hearthrug, stopped short his Christmas Carol and looked up in amazement, unaccustomed as he was to such displays of levity in that house. "Dear old Pickwick," continued Lucy not heeding old tabby's surprise, "there is more real goodness, more charity, more true christianity in your pages than there is in half the sermons ever printed. True to nature, you know how to touch the chords of the human heart, and you shall be my companion to-day. Though my body be a prisoner, my mind is free to follow you to Dingley Dell, to revel in your light-heartedness and gaiety, and under the light of your benevolent smile forget this dismal place with all its sordid associations."

Lucy pulled the rickety arm-chair nearer the fire, and was soon absorbed in the adventures of Mr. Pickwick. Though much delapidated, the Christmas chapter was intact. The poor girl forgot all her wretched surroundings, and really felt for the time being that she was one of Mr. Wardle's happy guests. She laughed and cried in turns, but when she came to "The Story of the Goblins who Stole a Sexton," the character of Gabriel Grub, so like that of her mistress, made her shudder, and her mind returned once more to the stern reality of her lonely life.

The scene changes, and all is merriment again. Lucy follows the Christmas party to the ice, and is convulsed with laughter at the appearance of Mr. Winkle on skates.

She read on and on, forgetting all about her tea. Now and then she put the book down and gazed in the fire, conjuring up scenes of bygone days; of Christmas-eves when she was called to the kitchen by the cook to help to stir the pudding; of those delightful Christmas mornings when Santa Claus left his huge stockings at the foot of her little bed, crammed with toys, sweets, and cakes. She heard again the peals of laughter which greeted her when her cousin Charlie caught her under the mistletoe; and then her thoughts wandered to the burning plains of Africa, where the savage Kaffir stole that young life she loved so well. In the midst of these day-dreams, overcome with the heat and impure air of the ill-ventilated little room, she again fell asleep, and soon her hands unclasped, and "Pickwick" fell upon poor Tom's nose, and drove the old cat disgusted to the attic.

Lucy was aroused from her slumber by a peculiar scratching noise at the street door. The girl's teeth chattered with the cold, for the fire had burnt itself out, and the oil in the lamp was nearly exhausted. She looked at the clock, and the hands pointed to eleven. Some seconds elapsed before she really heard the sound, although the scratching awakened her. "What can it be at this hour?" she asked herself. She listened at the door leading to the shop, and in less than a minute the noise was repeated. It was evidently some one trying to insert a key into the lock. It could not be Mistress Ironsides, for the door was locked from the inside, and Lucy possessed the only key belonging to the post-office. The girl shivered, but not from fear. The cold was intense, and it was with difficulty she could keep her teeth from knocking together as she listened for a return of the sound. After a painful pause she heard two men in earnest conversation. Creeping on tip-toe she approached the street-door, put her ear to the key-hole, and heard these words: "You go up the Didbury-road and look out for the bobby—he only comes this way every hour—and in less than ten minutes I'll meet you with the swag." Lucy's heart began to beat violently. She no longer shivered with the cold; her brain seemed to be on fire, and she was rooted to the spot. She distinctly heard one of the men rapidly receding, and then came another awful pause. The truth dawned upon her, and she at once realised her awful position. "The post-office is to be robbed, and I am to be murdered unless I quietly submit. I can escape by the back door while the thief is entering at the front, and thus save myself. But the property in my charge—the money, the stamps. Shall I desert my post? No! Love for my mistress I have none; but my duty is to remain here and defend the place so long as God gives me strength to defeat this ruffian." These thoughts, in a hundredth part of the time it takes to record them, flashed through Lucy's brain, and the heroic girl took her stand near the outer door, prepared for the very worst. She had not long to wait. The man whose voice she first heard, called through the keyhole: "I say, miss; can you let me have a stamp for my master?" "Who is your master?" asked Lucy. "Why, Squire up at the Hall, to be sure," replied the man. Lucy knew this was only a ruse, for Squire Gordon had sent for a pound's worth of stamps only the day before.

"The office is shut. Besides, we never open in the middle of the night for anybody. Go away, or I will call the Postmistress to you." "Ha! ha! ha!" laughed the man. The mistress be at Didbury, and you be alone; so

open the door, my lass, and don't keep master waiting, or you'll be gettin' into trouble." Lucy felt that words would only be wasted, and refused to answer the rascal. The demand was repeated several times; but getting no reply, the man lost patience, and tried once more, though not so cautiously as before, to insert the key. It would not turn the lock, and with a low curse, he put his back to the panel, and tried to burst in the door. With a smothered cry, Lucy placed her back to the inside, and when the ruffian felt the resistance, he growled with suppressed fury: "If you don't move out of the way, I'll blow your brains out when I get inside."

The poor girl knew it was in vain to call for help. There were only a few farmhouses close by, and the Christmas rejoicings in each of them would prevent the inmates hearing a cry from the interior of the lonely post-office.

Another pause, and Lucy heard the jingle of tools, a sound which told her the brute was preparing to enter by mechanical means. In this brief interval she turned and faced the door, and, to her intense horror, she found that the iron bar was not in its place. To make this clear to the reader, it is necessary to explain that in addition to the ordinary bolts and locks the postmistress had only lately added a heavy iron bar, fitting into two grooves, which gave further security to the place. Lucy felt that resistance was useless. She looked about in the dim light for the bar, but it was nowhere to be seen. She thought of the chest of drawers in the other room, but the door was too narrow for her to pull them through. How could she barricade the front door?

As she was trying to collect her bewildered thoughts, the burglar wedged in his crowbar between the post and the door. The timber creaked, and the power of the lever shook the little shop, and made the girl feel her last moment was at hand. In turning round to grope for something to slip into the place of the bar, she struck her elbow against the desk of the telegraph instrument. "Ah," she thought, "if I could only get Didbury before this ruffian breaks open the door, and tell the clerk on duty the office is being robbed, the police might have time to catch the thief, and save the property." Without a single selfish thought, the girl put her hands upon the pedals of the single-needle instrument and began to call Didbury. The crowbar was inserted again, and the door offered less resistance. With a supreme effort, Lucy turned round the desk on which the instrument was fixed, nearly disconnecting the wires, and forcing her right arm into the grooves, and one foot against the bottom of the door, she continued calling Didbury with her left hand. Didbury was a large and important station, open day and night. "Will he never answer," moaned poor Lucy. She had only called for a few seconds, but that brief period of time seemed an age to her.

The burglar forced the door, muttering "curses, not loud, but deep." Lucy bit her lips and writhed with agony, as her poor arm, wedged in the grooves, was nearly broken at each thrust of the crowbar. For a moment she ceased calling, and she heard the ticking of the needle answering her. She had just time to say, "The office at Brent is being robbed, and I shall be murdered. For God's sake send to the police!" before the burglar made a run at the door, and the pressure on the brave girl's arm deprived her of strength, and her left hand fell powerless by her side. The thief paused in his work, and Lucy saw by the light of the moon, which entered through the cracks of the door, the missing bar lying on the floor near the counter. Quick as thought she released her arm, snapped up the iron, and slipped it in its place. The ruffian, as the bar

fell into the grooves, uttered a horrible imprecation, and his footsteps were heard receding from the door.

Lucy flung herself into a chair, and thanked God for her deliverance. Her arm was terribly bruised, and gave her intense pain. Didbury is only two miles distant, she thought, and, if the clerk sends to the police, they will be here in ten minutes. Eleven minutes elapsed, and footsteps were heard approaching the back of the premises. "Ah, here they come," exclaimed Lucy. "They have ridden across the fields to save time." She was about to open the door to admit the police when, to her dismay, the same voice called out:—"Now, are you going to let us in; there are two of us this time." The villain, failing in his attempts to enter at the front, had brought his accomplice to assist him at the back.

Without waiting to reply, Lucy rushed to the chest of drawers, and dragged them from their place towards the door. Down fell the big china dogs, smashing into a hundred pieces. "Early Piety" and the rest of the old books strewed the floor. The exiled cat, hearing the noise, left the attic, and came to see what was the matter. As Lucy pushed the drawers and barricaded the door, old Tom ran backwards and forwards, his back arched and his tail as big as a fox's brush, swearing and spitting as cat never swore before. The ruffians then made for the window. Lucy ran to the table to seize a knife that was lying on it, and, in her eagerness to reach it, knocked over the lamp and put out the light. She could see in the moonlight the faces of the men as they approached the window, and she instantly recognised two tramps who had been hanging about the village for the past two or three days.

The window was fastened, and the panes of glass were small. Lucy felt she had done all she could to defend the office, and she now stood like a statue, with the gleaming knife clenched in her hand. Smash went the glass, one pane after another—then an arm appeared, the catch was undone, and the window sash was raised in a moment. Both the ruffians leapt in, and one of them approached Lucy to disarm her, when a loud knock was heard at the front door. Lucy uttered a piercing cry, and fell lifeless on the floor. The thieves knew well enough that the police had arrived, and made for the back window. There was no escape that way, the sergeant having wisely posted two of his men at the rear of the premises. The house was surrounded, and the villains fell into the arms of two sturdy constables, who quickly shackled them together, and in less than an hour they were safely lodged in Didbury gaol.

The brave telegraph clerk was raised by the inspector, who remained with her until the postmistress was sent for. When Miss Ursula appeared she grieved more over the loss of her two china dogs than the injuries her brave clerk had received. It was some weeks before Lucy recovered, and when she gave evidence against the tramps at the assizes, her simple story of that night of terror won her the sympathies of judge and jury. The police were rewarded for their promptitude and successful capture of the thieves. And Lucy Morton—what became of her? Was she rewarded? Well, yes, in a way. Though she did not get more than compliments from her mistress, she obtained a protector for life in the person of the son of one of the county magistrates, who, being on the bench at the trial, recognised the post office heroine as the sister of his old school-fellow—Archie Morton. The young gentleman lost no time in seeking an introduction, and after a brief but happy courtship they were united, and they now live at a grand house not three miles from Brent.

Miss Ironsides has gone over to the majority, and the post-office is in the charge of a young couple who were

formerly on the staff at Didbury Telegraph Office. They regard Squire Brereton's wife as a sort of patron saint, for Lucy is always sending nice presents from the Hall, and the dear lady does her best to ameliorate the condition of the Telegraph Clerk. Although she is surrounded with every luxury, she never forgets her former position. The old "Pickwick" has a place of honour in her own little sanctum; and every Christmas Day, in the midst of the merry-making, she retires to her room for awhile, and, with the book in her hands, her thoughts wander away from her grand home to the lonely Christmas and that night of terror in the little post-office of Brent.

TELEGRAPH INSTRUMENTS AND HOW TO UNDERSTAND THEM.

BY ELEKTRON.

HAVING given you an idea how electricity is generated in the simple voltaic cells, I will now proceed to initiate you in the mysteries of that useful little instrument the galvanometer. You will probably be very anxious to learn all about the batteries in your office, but you must advance in scientific knowledge step by step if you wish to make real progress. If you have followed out my directions in No. 1, and made with your own hands a miniature voltaic cell, you will be eager to find out whether it will work properly. Now, you cannot test your battery without a galvanometer, and if you are at a country station you may seldom get the chance to borrow the lineman's instrument, therefore you must make one for yourself, and you will learn more about the single-needle instrument while you are contriving your galvanometer than ten years' manipulation in a busy office will teach you. Before we go into practice, however, let us devote a little time to the theory of the thing. Theory sounds dry, doesn't it? Hypothesis, dryer still. So let us use the two commonplace words—"Why" and "Wherefore"—instead. You ought to inquire and find out the why and wherefore of every scientific fact that comes under your notice. Some people are very clever at the practical part; others study the why and wherefore, and neglect the practical; but no man can attain to eminence unless he masters both. You see your needle instruments working beautifully every hour during your period of duty; numbers of you can read "G," or without giving "understand" after each word; but how many good telegraphists know why the needle beats sometimes to the left, sometimes to the right. Follow me, dear friends, and you shall learn the why and the wherefore—in other words, the theory of galvanometers and needle instruments shall be made clear to you.

In the year 1819, Ørsted, the celebrated Danish philosopher, discovered that mutual relations existed between electricity and magnetism. He experimented with a magnetised needle, a voltaic battery, and a piece of wire; with such simple apparatus the glorious discovery of practical telegraphy was made, and you ought to repeat Ørsted's experiment before you make your galvanometer. Get a piece of steel, the kind used for ladies' stays or crinolines, and cut it the length of the indicator needle of your S.N. instrument. Soften it by heating in the fire and allowing it to cool in the ashes, to prevent too much air getting to it. Now file it into the ordinary lozenge shape, balance it and find out the true centre; make a little cavity with a centre punch, a tool which may be made by grinding a piece of tempered steel to a point, harden the

steel again by heating and dipping it into water; it will now be ready to magnetise, which is easily done by rubbing the needle with the poles of a common horse-shoe magnet or lodestone. You must now balance your magnetised needle. This is easily done by driving a strong sewing-needle, point upwards, into a piece of wood. The point of the needle will fit into the cup you have punched out, and all will be ready for Ersted's experiment. If you want to get a good deflection, join two pieces of wire to the terminals of your office battery, and scrape off the gutta-percha at the other ends. Now hold the wires over your magnetic needle, and connect them. The moment they touch, you will see the needle turn briskly aside, and set itself at right angles to the wire; reverse the position of the wires, and the needle will turn the other way. Now does not the light break in upon you? Yes; I am sure you can see in this simple experiment the principle of the single needle instrument. When you changed the position of the wires you reversed the direction of the current—just exactly what you do with the pedals of your instrument. The black keys you so skilfully manipulate are nothing more than current reversers. Now, commit the following law to memory, and you will understand a great deal about all galvanometers and needle instruments: If the current flows through the wire above the needle, from north to south, the magnetic needle will turn to the east; if the current flows from south to north, the needle will point to the west. If, however, the current flows through the wire *below* the needle, the deflections will be reversed. In order to keep these movements in the mind, a distinguished French philosopher, named Ampère, suggested the following curious rule:—

Suppose a man swimming in the wire with the current, and that he turns so as to face the needle, then the North Pole will always be deflected towards his left hand.

You have been experimenting with a straight piece of wire, and if you had not used a rather strong battery, you would not have obtained a good deflection. The wire and needle will not serve you for testing weak currents of electricity, so you must multiply the effect. This is done by carrying the wire more than once round the needle—the greater number of turns the stronger the deflections. The why and the wherefore of this is explained as follows:—The neighbourhood of the wire through which the current is flowing is a magnetic field. You doubtless know that if the north poles of two magnets are brought near each other, they will *repel*, not attract, and the same effect is produced with two south poles. Unlike poles attract, like repel. Now just imagine the molecules of the wire to be converted into little magnets, each particle possessing a north and a south pole; the molecules of air surrounding that wire are magnetised by induction, and influence the needle in the same way as a visible horse-shoe magnet would affect it. A simple experiment, however, will give you a better idea of magnetic induction than pages of descriptive matter. Get a few iron tacks and pick up one with your horse-shoe magnet. You will find that the *tack* has become magnetic and will pick up another, and so on, until you get a chain of tacks; break the chain in the centre by withdrawing one tack, and all those below the break will immediately lose their magnetism and fall to the ground. That is a very good illustration of induction, and it is easy to conceive the air molecules becoming magnetised by induction and influencing the needle under the wire. You can now finish making your galvanometer, for the rest of your task is comparatively easy. A bit of wood, two and a half inches wide and an inch and a half thick, will do to wind your wire on. The best wire to use is No. 30 silk-covered copper wire, and

about nine feet or ten feet will suffice. The extremities must be bared, for soldering to the terminals, and before slipping the wire off the wooden winder, bind the four corners of your coil with a piece of sewing silk; next find the centre, and let your pivot pass between the wires; balance your needle, and when you have got it to lie within the coil by moving the base-board until the needle is in the magnetic meridian—i.e., pointing north—touch the wires with the little voltaic battery I described in No. 1, and if you have not rubbed off any of the silk covering of the wire, you will get a strong deflection. Having satisfied yourself that your work is good, solder the ends of the coil to two small binding screws, fix the coil and screws to the wooden base-board, and your instrument is complete. In fixing, however, let me give you one word of caution—don't introduce any iron wire or tacks, but use a bit of stout insulated copper-wire to fasten your coil to the board. If you do not care to make your magnetic needle, you can purchase one, beautifully-made, for a small sum, of H. & E. J. Dale, the manufacturing electricians, of 26, Ludgate-hill, London. You can also have sent by post small quantities of wire and binding-screws. Those students who have neither the time nor the inclination to make their own instruments, can obtain at Dale's a very neat little galvanometer for 3s. 6d., and a superbly-finished instrument with a silvered scale for 10s. 6d.

RECOLLECTIONS OF A GRIZZLY GRINDER.

THERE can be no doubt that on the whole the telegraphist has benefited by the transfer of the British lines to the State; but the policy of the postal authorities in breaking down the identity of the staff as a separate trade or profession, is, in my opinion, a very short-sighted one. Much of the old spirit of Freemasonry is disappearing from our midst; that mysterious something by which we used to think we could spot a grinder, otherwise a stranger, is lost; and with it has gone, also, the love of the work for the work's sake; while the spirit of emulation, once a characteristic of the Grinder, has given place to a mechanical and perfunctory performance of the work, and a general degeneracy both in its quantity and quality. Those who should have been our leaders have, in many instances been tempted to forsake their first love, by hankering after the flesh-pots of Egypt. In the hope that the TELEGRAPHIST may be the means of restoring something of the old clanship amongst the brethren scattered throughout the world, I gladly accede to the Editor's suggestion that I should furnish him with some of my recollections of by-gone days.

There is nothing very poetic in the first adventure that comes to my mind, but it has, at any rate, the advantage of originality.

In the year 185—, while stationed in a large Yorkshire town, I made the acquaintance of a smart girl from Manchester, who was on a visit to her uncle, a goods' guard on the London and Yorkshire, who also kept a pub in a village near Halifax. I was invited to spend the *feast-Sunday* at the inn, and in order to reach my destination, after I got off duty on the Saturday night, I had to change at Low Moor Junction, a bleak, desolate spot, at the mouth of a tunnel, and surrounded on all sides by vast mounds of refuse from the ironworks, the ever-blazing chimneys of which threw a weird light over the dismal scenery. The night was cold and wet, and there being little or no shelter on the station, I was glad to find refuge in the adjacent

inn during the forty minutes I had to wait. As I entered the large tap-room or kitchen, a glorious smell of steak and onions greeted me, which I found proceeded from an immense frying-pan, on a fire big enough to roast an ox. At a table in the chimney-corner sat a number of rough-looking fellows, who I suppose were either colliers or iron-workers, and in front of them plates, large oven-cakes, and jugs of ale. As I entered the room the contents of the frying-pan were being dished up in a rough and ready fashion, and, as I ordered my glass of beer, I could not avoid casting covetous glances at the frizzling meat. To tell the truth I was awfully peckish, the scraping together a few shillings for the ex's of my trip, a new tie, and some cheap cigars, having necessitated more than usual economy in the feeding department during the week. I was not to ask twice, however, for when one of the men asked me to join them, by saying, "Nah, lad, wilta hev a bit?" In a marvellously short time the dish was cleared. I noticed that the meat was somewhat tough, though full of rich gravy, and that it had a peculiarly strong flavour; but I never suspected its origin until my host, smacking his lips, as he licked up his plate with his bread, declared it "as nice a bit a kicker as iver trailed coils up Wibsey Moor." For a moment my stomach revolted, but the whistle of the approaching train left me no time for reflection, and by the time we settled down into our places the feeling was gone.

I spent a very pleasant holiday with my sweetheart, and before parting we swore the eternal vows usual on such occasions; but I never saw her for twenty years afterwards, when I recognised her in a frowsy-looking, fat woman, with a dirty baby in her arms, behind the counter of a small tobacconist's shop in the Oldham-road, Manchester.

THE TELEGRAPHIST ON THE STAGE.

BY W. LYND.

FROM the earliest times, and in the very lowest stages of civilisation, man has attempted to impart amusement by dramatic representation. The acting of some of the ancients was of a very rude type, and can hardly be designated as high art. The first comedians were merely rustics, smeared with the lees of wine, who sang songs and declaimed a few words of commonplace dialogue. Then came Thespis, with his cart or travelling show, and his two actors clad in goat-skins. With our high-flown notions of stage effect, gorgeous scenery, and the numerous accessories of a modern play, it is difficult to conceive a tragedy performed in the open air; a little cart for a stage and a couple of scantily-clothed men to represent the entire strength of the company. After Thespis followed the Greek drama proper, and a third actor was introduced. *Æschylus*, *Sophocles*, and *Aristophanes* adorned the stage, and from that period the drama has flourished in spite of the vicissitudes of the poor players and the powerful opposition to the mimic art by the Pecksniffs of this and every other age, who have worked hard to abolish the innocent amusements of the great mass of mankind in order to maintain their position as *moralists and improvers of society*. Herbert Spencer has said that to worship is a natural constituent of man's nature. The great philosopher might have added, to act or to attempt mimicry is also a constituent of human nature. Even our babies, so soon as they can lisp, enact little dramas in the nursery. They play at weddings and funerals with all due solemnity, and deck themselves in papa's and mamma's hats and cloaks. Later on, at school, the passion for acting becomes stronger, and if the master does not put up a farce or a charade to serve as a vent for

the histrionic exuberance of his scholars, he finds himself taken off to the life by the comedian of the school, who, perched upon the stool, a pair of tin spectacles on his nose, and a cane in his hand, delivers before his laughing audience a burlesque exordium which makes the pedagogue feel very uncomfortable if he happen to be within earshot.

But never does the latent mimicry of the *genus homo* become so intractable as when he is neither man nor boy. At that eventful period when the down begins to sprout on his upper lip like the fluff on a gooseberry—the period of hobbledehoydom, as I have heard it called—he fancies himself a born actor, and weds himself to the Muse. Sometimes he haunts the stage-doors of the theatres to catch a glimpse of the pet of the ballet, and not unfrequently he finds to his cost that his charmer is far more mortal than fairy—her food not ambrosia, but beef-steak and onions; her drink, not nectar, but stout and bitter. Destroyed illusions and lightened purses do not act as checks to his ambition for histrionic fame, and sooner or later the stage-struck hero finds himself on the real boards, an object of ridicule or the envy of the unsuccessful aspirant, and the admiration of his friends. The telegraphist is no exception to the rule—punching, tapping, reading "slip," and watching the deflections of magnetised needles do not satisfy his hungry soul. He must do his soldiering, his bicycling, tricycling, and many other "ings," but above all his acting. Many a "grinder" on night duty has whiled away the small hours by declaiming in solemn accents, "To be or not to be," or shouting in kingly fashion, "A horse! my kingdom for a horse!" Often has the sucking tragedian's head come in contact with the office floor or the rail of a chair in rehearsing a back-fall, and the youthful *Roscus* has gone home in the morning with bumps that would have puzzled the most skilful phrenologist. With my experience of the telegraphist I was not surprised when I received an invitation to attend an amateur performance at the Labroke Hall, Notting-hill, on Saturday, Dec. 1. The anxiety and work attending the production of our new *Journal*, coupled with other worries, had almost placed me *hors-de-combat*, and I would not have left my "ain fire-side" that night for the Italian Opera or the best play ever produced at a London theatre.

To see the telegraphist on the stage, however, was too strong a temptation, so I made a supreme effort and wended my way towards Labroke-grove. When I arrived at the Thespian temple, I found that I had missed the first play, but I was in time for the *pièce de résistance*—Palgrave Simpson's drama, "Time and the Hour." The play and the actors were applauded to the echo, but that made no impression on me, for had not each character his most particular friends in front? It would have been hard indeed if their chums had not given them a hand; but old stagers pay very little attention to applause and calls at amateur performances. I went to criticise the acting, and to give a faithful report—good, bad, or indifferent—of the telegraphist on the stage. The scenery at the Labroke Theatre was beneath notice. It was the usual stock canvas, daubed for the amateur by some remote individual whose name will never figure on the roll of eminent scene-painters. The properties were on a par with the scenery; so whatever credit was due to the performance depended entirely on the acting. The name at the head of the cast was that of Mr. A. Sulley, who represented Sir Phillip Deverill. Mr. Sulley has a good appearance, but his acting was of the old melodramatic type, and his grimaces and Mephistophelian expressions more than once raised a titter in the auditorium. Mr. Sulley does not hold with Richard that a man can smile, and murder while he smiles; wicked deeds were coupled in the actor's mind with

sardonic grins and the frequent display of a fine set of ivories. Mr. Sulley ought to see a few good modern comedies, and give up the old Vic style of acting, for he has some rough talent in him which only requires careful training to develop.

Mr. Dickenson wrestled with Mr. Franklin, a rich banker, and, judging from his melancholy delivery and the angularity of his attitudes, the British financier is a curious sort of animal. Charles Franklin was represented by Mr. L. Tinson, who looked almost as miserable as his father, and had very little "go" in him. The Montgomery Brown of Mr. Bromhead amused the audience, but the laughs were got by clowning, and not true comic acting. I must not be too severe on Mr. Bromhead, for I have seen provincial comedians play the Joey quite as excessively as did Mr. Bromhead with Montgomery Brown, and after all it was a creditable performance for an amateur. The two remaining male characters, Medlicott (Mr. H. Bloxam) and Sparrow (Mr. T. Brandon) were represented in a manner which merits the highest praise. Both these gentlemen displayed an amount of genuine talent. Mr. Bloxam acted with professional ease, and rarely missed a point. If I had seen Mr. Brandon, as Sparrow, in a country theatre, I should have noticed him as a very good character comedian. There were no visible signs of nervousness about his acting, and he never took liberties with his part, nor obtained a single laugh in an illegitimate way. His make-up was good, with the exception of a coloured handkerchief, which hung out of his coat pocket and wagged about like a red and white tail, and reminded one of the missing link. The ladies were of the ordinary minor theatre type—two of them played tolerably well, but one lady was very amateurish in her delivery and gestures. The Marian Beck of Miss Agnes Temple was a little over-acted. The lady at the end of the acts worked up the situations in a manner which implied, "Now I'll let the audience see the difference between professional and amateur acting."

With all their faults, and it would be next to impossible to conceive an amateur performance without a fault, the members of the St. Martin's Dramatic Club acquitted themselves wonderfully well. The melancholy banker was an Irving to some amateurs I have seen. And there was not much work for the prompter to do. To tell the truth, I visited the Ladbroke Hall on the night of the 1st, anticipating the usual torture of an amateur performance. I was agreeably disappointed. Instead of a wretched display of imbecility I witnessed an intelligent though exaggerated rendering of several of the characters, and discovered two gentlemen who would make their way as actors if they entered the lists of the dramatic profession. The members whose faults I have pointed out must not be discouraged at friendly criticism, even if it be slightly adverse, but try to remedy their shortcomings so that the next performance shall be a decided improvement on the last, and enable me to give a still better account of the telegraphist on the stage.

"HIS TROUBLE," an amusing sketch by "Paff," obliged to stand over until next month.

The Hire-Purchase System of Furnishing conducted by NORMAN & STACEY commends itself to all classes. It combines real economy on sound commercial principles, with strictly private arrangements, and is free from all the objectionable formalities which attach to dealers and others. No interest or fees are charged, and payments can extend over 1, 2, or 3 years. The wholesale firms embrace the best manufacturers, who have large stocks for selection, and no additions are made to the ordinary selling prices. Intending purchasers should call or send for particulars.—Offices, 11, Queen Victoria-street, E.C.—[ADVT.]

Editorial Notes.

THE TELEGRAPHIST this month contains eight extra columns of original matter. This increase in size cannot be permanent, although it is the intention of the proprietors to enlarge their Journal so soon as the circulation will permit. We number nearly 7,000 supporters in the Telegraph Services, and many of our subscribers have asked us to make the TELEGRAPHIST a fortnightly instead of a monthly paper. After taking into consideration the enormous expense already incurred in floating the Journal, without a thought about profit, we have decided to issue the TELEGRAPHIST every fortnight if each of our present supporters will obtain for us one subscriber amongst his or her friends and relations. This should be an easy task just now, for a large percentage of the community take a great interest in electrical matters. When the circulation reaches 14,000 the Journal shall be issued bi-monthly, and then very few contributions of merit will have to be rejected. We shall be very pleased to receive the opinion of our readers on this subject.

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WE have received numerous complaints about the non-appearance of the TELEGRAPHIST at the railway bookstalls, and we take this opportunity to inform our supporters that we have done our best to induce Messrs. W. H. Smith and Willing to take the paper on sale. We believe that the matter is under consideration so far as Smith & Sons are concerned; but Messrs. Willing, who have the bookstalls on the Metropolitan Railway, positively refuse to have anything to do with the TELEGRAPHIST unless we pay them so much a month for advertising at their stations. As we decline to submit to this, telegraphists must not be surprised if they do not see their organ on the bookstalls of the Metropolitan lines. There ought to be no difficulty in obtaining the TELEGRAPHIST. Copies may be ordered of the publishers direct, or through any bookseller in the kingdom.

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THE TELEGRAPHIST may be said to be a decided and unqualified success. Piles of congratulatory letters have reached us from all parts of the Kingdom; and, as we anticipated, our challenge to the literary telegraphist has resulted in a great number of contributions, many of which deserve a place in our columns.

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ALTHOUGH we are most anxious to recognise real talent, and please all our contributors, it would be impossible, even if we doubled the size of the paper, to publish all the MSS. we have received. The prize sketches already to hand would fill an octavo volume; and many of the provincial reports are too long. Contributors whose sketches and paragraphs do not appear must make allowance for the difficulties of our position, and not be discouraged if their efforts do not meet with instant recognition.

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WE must not miss this opportunity of thanking our friends in the Cable Companies for their prompt recognition and kind expressions of sympathy; and we heartily wish our many supporters in the Postal, Railway, and Foreign Telegraph Services a right Merry Christmas and a Happy New Year.

LONDON DISTRICT OFFICES.—"Mems. by 'Tic'" in type, but crowded out this month through want of space.

T. S.* Items.

ELECTRIC B. AND A. CLUB.—The fourth cross-country run of this club took place on Wednesday, Nov. 28, when fifteen members and friends started from the Jolly Anglers, Lee Bridge. The hares (Messrs. Knowles & Cobb) were despatched at 4.10 p.m., the hounds taking up the trail six minutes later. The cross taken was from Lea Bridge across the fields to St. James-street, through Walthamstow, making a cut across country and returning *via* Lea Bridge-road. The distance covered was about eight miles, the going being very heavy, and, owing to the continuous rains that had fallen, several water jumps had to be negotiated (only one spill occurring). The hares arrived home at 5.3 p.m., and the first hound at 5.5 p.m. The following were the first six:—Messrs. Stubbs, Fry, Barfield, Braybon, Hopgood, and Bullard, all being home by 5.13.

The annual concert of this club will take place at the South Place Institute, Finsbury-pavement, on Saturday, January 12. Tickets may be obtained from the hon. secretaries, at the C.T.O., and at the doors. All who are desirous of spending a pleasant evening are strongly advised to attend. Commence at 8.15 p.m.

The third annual dinner of this Club took place on December 15th, at Anderton's Hotel, Fleet-street, when a majority of the leading lights of the Club did full justice to an elegant menu, served in the excellent style this hotel is famous for. After the usual loyal toast came the toast of the evening, "Success to the Club," coupled with the name of Mr. J. Grant, which was enthusiastically received. In replying to the toast, Mr. Grant reviewed the Club events of the past year, and congratulated the members upon the success that had attended their various fixtures, both athletic and musical. He also announced that several swimming handicaps would be held during the year, and that arrangements were being made to admit members of the Club to the baths at reduced rates; that the cross-country runs and the smoking concerts would be continued, to be followed by the annual concert and ball, to the success of which he hoped all the members would contribute by bringing their friends. The toast of "The Chairman" (Mr. C. H. Mitchell), which was enthusiastically received, elicited a very neat reply from that gentleman, in the course of which he expressed his pleasure at the popularity of the Club amongst the ladies of the office. He hoped they would continue their support, and that they would all witness the competition for the ladies' prize it is the intention of some of them to present. He was sure that with the aid of the plucky members the Club contained, and with the support from the office that the efforts of the committee deserved, the Electric would soon be one of the best in London. The other toasts were "The Vice-Chairman" (reply, Mr. Gibson), "The Officers and Committee" (reply, Mr. W. F. Gadsby), "The Ladies" (reply, Mr. J. H. Brown), "The Prizewinners of the Year" (reply, Messrs. H. G. Reed and S. Trott), "Those Who Assisted at the Concert Last Year" (reply, Mr. O. Bathurst). In proposing the health of "The other T.S. Clubs, Mr. J. Grant referred to the good work done by the Cricket Club, and announced the probability of the amalgamation of the Football with the Athletic Club, which was cordially received. Interspersed with the toasts a most artistic musical programme was carried out. Want of space prevents a full report, but the accomplished pianist, Mr. P. Evetts, and Messrs. O. Bathurst, F. Evetts, W. G. White,

* Central Telegraph Office, London.

J. H. Browne, T. Gibson, and others deserve the warmest commendation. One of the most enjoyable evenings in the annals of the Club terminated with "Auld Lang Syne."

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MISS DALZIEL has recently been transferred from Chester to the "D" division. The event has created great sensation among the young gentlemen who have an eye to matrimony.

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MR. A. G. BARBER, late of the "A" division, sailed on Tuesday, Dec. 4, for New Orleans *via* Antwerp and Havre, on his way to San Antonio, Texas. He has abandoned telegraphy to join his brother, who is a farmer in the "Far West."

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ST. MARTIN'S FOOTBALL CLUB.—(St. Martin's v. Victoria Rovers.)—The above match was played on the Rovers' ground at Victoria Park, on Dec. 1. The Rovers kicked off, and Murdoch returned the leather to Gilliver, who dribbled the ball into the Rovers' territory, but the Rovers' backs, however, returned the leather. Some sharp play now ensued in close proximity to the Rovers' goal, but the ball was sent away again. Simons gained possession, and Webb had some sharp tackling to do; he, however, did the needful, passed it to W. E. Braybon, Howie, and Murdoch, who scored a fine goal. The Rovers kicked off again, and, by a combined rush, took the ball to the St. Martin's quarters, when Johnson made a fine shot for goal, which was saved by Knowles in fine style. This was the Rovers' last chance, and on the change of ends the St. Martin's vigorously pressed their opponents' goal—No. 2 being soon scored by Cobb from a centre by Avery. The Rovers now made a desperate stand, but without avail, as A. Braybon took the ball from Simons and ran it through, thus scoring goal No. 3, which was disputed on the ground of a foul. The umpires, however, decided in favour of the St. Martin's, who, as nothing further resulted, were victorious by three goals to nil. For the winners, Murdoch, Howie, Avery, A. Braybon, and Gilliver were the best; and for the Rovers', Simons and Johnson.

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At a meeting held in the Clothworkers' Hall, Mincing-lane, E.C., on Monday evening, December 10, under the presidency of the Lord Mayor, Professor Huxley, P.R.S., presented the prizes given by the City Guilds to the successful competitors in the last session examination. It may interest our readers to know that several members of the "T.S." staff received prizes and certificates in practical telegraphy, which is one of the City Guilds' technical subjects. Professor Huxley, who was warmly cheered, made a very interesting speech, in the course of which he prophesied "that the next generation would see hundreds of Science and Technical Schools for every one there was at present." After the usual votes of thanks to the Lord Mayor and Professor Huxley, the prizewinners partook of refreshments at the invitation of the Clothworkers' Company.

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THE Electric Cricket Club celebrated the closing of a most successful season by the annual dinner held at the Clarence Hotel, Aldersgate-street, on Friday evening, Nov. 30. Seventy chairs were occupied, and full justice was done to a most substantial repast. After the usual loyal toast of the Queen by the Chair (Mr. W. J. Meill), the secretary (Mr. F. Marshall), in proposing "The Controller," said the Club had reason—good reason—to be

grateful to their respected head. He was one of the first to subscribe towards its expenses, and, he might say, the last, and had always evinced the warmest interest in its welfare. Mr. Webb (Vice-Chair) succinctly seconded the toast, which was pledged amidst vociferous applause. "Success to the Club" having been drank, the social was ushered in by an effective performance of the overture to "Zampa," by the pianist, Mr. Miell following with a song, "The Slave Chase," which was well received. "The Little Hero" was sympathetically sung by Mr. Cable; "Hearts of Oak," by Mr. Concannon; and "Nil Desperandum," powerfully and carefully rendered by Mr. Kellett. Mr. Bartlett in "Just my Luck," and Mr. Lorns as "The Masher King," were deservedly applauded, and a parody on "The Same Old String," composed for the occasion, and sung by Mr. Betteridge, was enthusiastically cheered for its references to the Club's engagements during the past season. Mr. Webb was heard to advantage in "The Englishman." Mr. Frederick's performance of "The Anchor's Weighed," and Mr. Abbott's "Marching thro' Georgia," being specially deserving of praise. Other pieces were sung, but owing to the shortness of time, many songs were omitted. A most enjoyable evening concluded with "Auld Lang Syne."

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A SOCIETY in aid of the poor of the Mildmay Mission District has been formed at "T.S." Numerous ladies have promised their assistance, and working meetings are held every Wednesday, a room in the basement being kindly lent for that purpose by the Controller.

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MR. W. GRAY MARTIN and Mr. E. A. Fusedale, members of the H. and D. divisions, sailed on Dec. 2 in the s.s. *Moselle*, for St. Thomas' Island, they having resigned the appointments at "T.S.," in consequence of their refusal to perform extra duty.

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A PETITION is being prepared for presentation to the Controller, asking for the abolition of long and short duty, a concession granted by the "Scheme," but which has nevertheless continued.

Colonial Items.

SOUTH AFRICA.

PERCY HERRING (Assistant-Superintendent at Fort Beaufort), has been very unwell, as has also his wife and child. When our correspondent's letter left they were all on the improve, and had gone to Balfour to recruit.

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FRANK ASPINALL has left Port Elizabeth for Kimberly on good promotion.

Cable Companies.

NEW RELAY STATION.—The German Union Telegraph Company will open a station in Lowestoft for relay purposes on Jan. 1 next. It will be provided with a staff of clerks from their Emden station. This will have the effect of greatly increasing the speed of working and the carrying capacity of their lines between Emden and London. 50,000 messages per month pass over this company's lines.

Provincial Items.

BIRMINGHAM.

ENTERTAINMENT BY THE MAYOR.—Last October the Postal and Telegraph Clerks of Birmingham figured in a new departure in civic hospitality, which at the time attracted very general attention and elicited commendation throughout the country. The *Pall Mall Gazette* spoke in high terms of the event. "It is noteworthy," it said, "that the range of civic hospitality continues to extend; and the poor are now being made to share in the good things going much more than was formerly the case. Birmingham, as we believe, started the new movement, and it is from the midland capital that the news of the latest development comes. The Mayor of Birmingham (Alderman White) on two nights entertained at a *conversazione* in the Council House the officers and *employés* of the postal and telegraph departments of the borough. These being some 500 in number, they had to be received in two contingents. Every branch of the service it appears was represented, from the General Postmaster (S Walliker, Esq.) down to the telegraph messenger; and one of the features of the programme was an exhibition of postal and telegraph curiosities." Among other officials present were Mr. Storey (Chief Clerk of the Post Office) and Mr. Dorrington (Chief Superintendent of Telegraphs). It will be curious to observe whether Alderman Fowler, who is still member for London, and a Tory of the first water, will imitate this phase of the aldermanic world by entertaining our T.S. *confrères*. Local heads have a precedent they may excellently follow.

TURNER SCIENCE CLASSES.—The Postmaster (Mr. Walliker) who, we regret to announce, met with an unfortunate accident the other day, but is now, happily, convalescent, has manifested an ardent desire for his staff to be thoroughly efficient, and has facilitated arrangements by which a science class has been formed for instruction in magnetism, electricity, and practical telegraphy, under the tuition of Mr. John Turner, a well-known local, and successful science teacher. Since the commencement of the class on October 22, an undiminished interest has been preserved, the members numbering upwards of eighty. The Chief Superintendent, Mr. Dorrington, is warmly attached to the promotion of the undertaking, and the local secretary, Mr. Haslam, made a personal canvas of the officers. The classes have been brought under the notice of the Central Secretary, who very cordially approves the hearty manner in which the staff has responded to the facilities of deriving technical instruction. I may also remark the healthy spirit which the pursuit of the scientific aspect of their craft discovers among the telegraphists of this and other offices. It bespeaks a determination to explode the sobriquet of mere ambidextrous monkeyhood, and to enter the arena of mental activity. It will, however, be of very transient benefit if the students merely attend the term, and do not afterwards follow it up as a permanent study. Operators have the advantage of practical conversance with the actual working of lines and apparatus; and it is not too sanguine to believe that when once the mass of operators have their observation guided and directed by the light of science, pursuing the study with ardour and assiduity, their inquiries will be attended with most happy and beneficial results. Science perfects genius, says Dryden, and moderates that fury of the fancy which cannot contain itself within the bounds of reason.

BOURNEMOUTH.

THE TELEGRAPHIST is well supported at this office, and an increased supply is necessary for the next issue. The first number is looked upon here as a success. There are, of course, little weaknesses detectable; but in what "first issue" is this not so? One essential point, however, is, that it is thoroughly and entirely a telegraphic journal, and that fills a gap which has too long existed. The best wishes of the staff here are with the editor; and it has been predicted that ere long the increasing popularity of the journal will warrant a bi-monthly publication.

VERY little is yet known here as regards the arrangements for the sixpenny tariff; but it is estimated that if the reduction is introduced upon a proper basis as regards the number of words, &c., that it will more than double the present traffic.

BRISTOL.

No report from this office received up to the time of going to press.

CARDIFF.

WE greet the advent of the TELEGRAPHIST with much pleasure. It is an organ greatly needed in so extensive a profession as ours, and will, I trust, be the means of uniting the various centres and promoting the common cause, by recording not only incidents of interest to the service, but by giving that instruction on technical and practical points which has never before been within reach of the majority of so large and important a body, and, therefore, should be liberally supported, especially by members of short service, to whose advancement it will prove of great assistance. Let our motto be "Unity," and success is certain.

DERBY.

ON the 10th ult., Mr. W. W. Bolton, of this office, gave an instructive and interesting lecture on "The Electric Telegraph," to the members and friends of the Derby Y. M. C. A., in the lecture-room of the Association. The chair was occupied by the Postmaster (S. Court, Esq.) The lecturer first gave an historical sketch of electricity, its various sources, describing the different theories by experiments with the electroscope, electrical pendulum, &c. Construction and maintenance of a line of telegraph were also dwelt upon. Signalling and working were illustrated by sets of apparatus communicating with different parts of the building, and contributed in no small degree to the enjoyment of the evening, the audience being delighted with the manner in which their messages were transmitted from room to room. A hearty vote of thanks to the lecturer terminated the proceedings.

DURHAM.

ON Friday night, Nov. 22, a young man named Price, telegraph clerk at the Dearness Valley Junction, whilst attempting to get on to the footboard of the van of a mineral train in motion, at the end of the North-road Viaduct, slipped and fell, but, fortunately, clear of the train, on to the embankment. The young man sustained a broken arm.

EDINBURGH.

IT is gratifying to be able to state that the TELEGRAPHIST has met with a cordial welcome here. It has given general satisfaction, and no fewer than 120 copies of the first number have been disposed of. The hope is confidently expressed that it will become of much service to the telegraph staff.

ELECTRIC GOLF CLUB.—The monthly medal competition was held on Dec. 14, over Bruntfield Links. Rain fell during the day, causing the play to be uncertain. Mr. J. Richardson won, with a score of (78 less 10) 68.

IMPENDING CHANGES IN THE ENGINEERING DEPARTMENT.—In connection with a paragraph from your Leeds correspondent last month, it may be stated that the vacancy caused by the transfer from Edinburgh to Glasgow of Mr. F. M. Keith, Inspector, is to be filled by Mr. Cross, from the office of the Superintending Engineer (Mr. Chambers), Leeds. At the same time Mr. Moir, of the Edinburgh Superintending Engineer's (Mr. Gibson's) office, will go to Mr. Chambers's district as an Inspector at Bradford, his place being filled by the transfer of Mr. Wilkes from Glasgow. Another transfer, whereby the Edinburgh instrument-room will be deprived of the services of one of its most experienced officers, falls to be recorded. Mr. A. Eden, who has acted for many years as the "EH Test," and who is well-known in that capacity, has received an appointment as a "Technical Officer" at T.S., and begins his new duties there on New Year's Day. While there will be general regret at losing him, Mr. Eden must be congratulated on his entrance into a new sphere, where he will find still wider scope for his abilities. He will carry with him the best wishes of the Edinburgh staff for his future success.

GLASGOW.

THE TELEGRAPHIST seems to have given much satisfaction here. The first parcel was sold out immediately, and a second edition called for.

MR. LIVINGSTONE, of this office, proposes to teach electrical science by means of correspondence. This method will be specially adapted to those in smaller towns who have no other means of acquiring such knowledge except through text-books. It may be stated that Mr. Livingstone is assistant to Principal Jamieson, of the Glasgow College of Science and Arts, and his thorough adaptability for the work he proposes to undertake may be inferred from the fact that last session all his students obtained certificates from the City of London Guild. Seventy per cent. of these were first-class passes, including the silver medal and £3 awarded to Mr. Jas. C. Binny, and a bronze medal and £1 to Mr. D. Mackie.

LANCASHIRE AND YORKSHIRE RAILWAY.

ONE of the above company's servants, stationed at Sowerby Bridge has lately discovered why the telephone is becoming so popular, is because one man can speak to another for five minutes without asking him to have a drink.

LEEDS.

WE have had the usual lively time at L.S. during the breakdown, extra Wheatstone circuits, and transmitting for everybody.

SOME three years ago, at the request of a large majority of the staff, the three weeks' holidays were split up into two periods of a fortnight and week respectively. There has always been a small but influential minority opposed to the change, and this has recently been strengthened by some of the first-class claiming to have their holidays altogether in the summer months, instead of taking them partly in the winter. Preparations were made for another poll of the whole office, but, at the last moment, the minority withdrew, and next year's holiday list has been published on the usual basis.

WE regret to announce the death of E. J. Smith, Esq., formerly Postmaster of Leeds, which occurred on Nov. 21, at Kirk Ella, near Hull, in his sixty-eighth year. Mr. Smith retired from the postal service five years ago, and went to live at Kirk Ella, to be near his daughter, who is married to C. H. Wilson, Esq., M.P. for Hull. He had been for some time suffering from asthma and gout, and although since his retirement he has occasionally rallied, he never fully recovered his health. Mr. Smith was Postmaster to the British forces during the Crimean War, and had held other responsible posts before coming to Leeds, where for many years he occupied a good social position, and was universally esteemed. He was one of the few postal officials who, at the time of the transfer, recognised the fact that a special training—if not, indeed, an apprenticeship—was necessary for telegraph work, and he was in consequence a great favourite with telegraph people of all ranks. He was equally popular among the postal staff under his control, and on leaving Leeds was presented with a joint testimonial which was a real expression of regard and esteem.

MR. NETTLETON has resumed duty, but is still very feeble.

MR. J. W. PLACKETT, of L.S., who is attached to the Surveyor's Staff as Telegraph Inspector, has had an attack of typhoid fever, but is now in a fair way to recovery.

FOUR officers from the East India Government Telegraphs have been in Leeds for a fortnight, making themselves acquainted with the various methods of Quad, Duplex, Wheatstone, and Translator working.

MISS COSTLEY and Miss Andrews have collected over £2 in the office and from their friends, which has been divided between Dr. Barnardo's Boys' Refuge and the Kilburn Girls' Orphanage.

DURING the hurricane on the 12th the house occupied by N. Harper, Inspector of Telegraph Messengers at Leeds, was literally cut in two by the falling of an adjacent factory chimney. Three of his children were injured and had to be removed to the Infirmary. Nearly the whole of the furniture, clothing, &c., in the house was destroyed. Poor Harper, who was formerly a U.K. lineman, and lost a leg by an accident, has a large family, and will be unable without help to replace his sticks. A subscription has been set on foot, and if any of your readers would like to help, Mr. Mat Jackson, of L.S., will gladly receive and acknowledge their contributions.

CROSS-COUNTRY RUNNING.—The first run of the "Harrriers" club formed amongst the L.S. Staff came off on Saturday, Dec. 8, from the Gipton Wood Inn, Roundhay-road, fifteen members being present. There was a fair sprinkling of the female staff amongst the spectators assembled to see the start. The hares, Messrs. W. H. Tarbuck and P. Kershaw, were despatched with the "scent" a few minutes after three o'clock, and the pack, consisting of W. North (pace), J. Bradley, J. Holroyd, W. Layton, S. W. Smith, S. Sparks, T. Jepson, A. Buckley, A. Wright, F. L. Bumby, O. Coppen, H. Naylor, and D. Braham (whip) went in pursuit ten minutes later. The trail lay for some distance along Roundhay-road, then diverged to the left towards the park; descending, it now led through the gorge, where numerous water jumps had to be taken, W. North and "Pash" Layton being particularly conspicuous. This tried the metal of the amateur "hounds" very much, as the water was swollen through recent heavy rains. Crossing the upper end of the gorge the scent lay for some distance across ploughed fields, where the ground, being in rather a heavy state, the "light weights" of the party, H.

Naylor, "Sid" Smith, and D. Braham were at an advantage; then once more into the woods round by the castle, and down by the quarry, which was the hardest piece of the whole run, the only descent from the quarry top to the road being by means of a tree growing from below, into which the "hares" had sprung and lowered themselves to the ground. From here round the end of the lake across the park to the boathouse, where the whips gave the signal, and an exciting run-in then took place, A. Wright (late of L.V.) and "young?" Bumby being neck and neck for some time, the latter at last winning a good race by a few yards. Coppen came next, bowling along in splendid style, and closely followed by "Alf" Buckley, Layton, &c., S. W. Smith and S. Sparks bringing up the rear. After the run the party sat down to a repast, and the evening was afterwards spent in a convivial manner. J. Holroyd sang "Who will Care for Mother now?" and a duet was given by Messrs. Tarbuck and Kershaw (well known in local temperance circles) called "Our Temperance Banner," a cornet solo by J. W. Ackroyd being well applauded, and after Mr. T. Jepson had again thanked these gentlemen for their services, the company dispersed. The first run being so successful, another has been arranged for the first Saturday in January, from the "Mint" Hobeck; hares, Wright and Buckley.

LINCOLN.

THE TELEGRAPHIST has given universal satisfaction to the staff in this ancient city, and you are to be congratulated, Mr. Editor, in bringing out such a journal in the interest of the telegraphic body. The necessity of such an organ has long been felt.

ON Sunday, October 21, at Mary-le-Wigford, Lincoln, Edward George Nash, telegraphist (late of Aldershot), to Lucy Bertha, youngest daughter of the late Charles Ellis, of this city.

LIVERPOOL.

HEAD POST-OFFICE.—The week ending Dec. 15 will long be remembered by the telegraph clerks of the British Islands for the violence of the gales that visited us, and the wreck of wires and interruption of communication which ensued. This was especially felt in this city, as through the visit of Sir Richard Cross, which extended from Tuesday to Friday, a great influx of press-work took place. The difficulties of satisfactorily dealing with it under such circumstances may be easily imagined, for at one period during the week over ninety wires were interrupted. The strain upon the staff, engineering and commercial, has been very great. During the month Mr. D. W. S. Scott has been appointed, and Miss C. E. G. Gwynne has resigned.

MANCHESTER.

G.P.O. and L. & Y. R.—No reports received up to the time of going to press.

NEWCASTLE-ON-TYNE.

THE TELEGRAPHIST has been well received here. Every one much pleased with first issue.

THE Technological Society is still going on successfully; interesting lectures having been given by Messrs. Mackie, Clarkson, & Sherwood.

A SOCIETY for the same object as the above is also in existence in connection with the engineering staff, composed principally of mechanics and linemen, under the presidency of Mr. W. R. Smith. They appear to be doing good work, and are also forming a library, to be composed of works on Telegraphy, Telephones, and the science generally.

ARRANGEMENTS are now being made for the Cricket Club annual gathering, which, to all appearances, will be a very successful one.

WE understand that Mr. Hardaker, formerly one of the N. T. Staff, now telegraph superintendent at Durham, Cape Colony, intends visiting England in the spring.

THE staff unite in wishing their *confrères* in other towns a Merry Christmas and a very Happy New Year.

SHEFFIELD.

AT this office the first number of the TELEGRAPHIST has given great satisfaction. We are expecting many important changes taking place shortly, both in regard to the office itself and in the number of clerks and instruments. Up to the present we hear of something like an addition of 50 per cent. in the number of instruments, many of the wires being duplexed—and this will, of course, necessitate the employment of a greatly augmented staff. The "powers that be" are now considering the best means by which the existing office accommodation can be extended, for even at the present time we are rather pressed for room.

OUR Bristol friends will be glad to hear that our letter-carriers are now busy forming a brass band, and although we cannot hope to compete with them in the matter of size, a very successful start has been made, sixteen members having already been got together. Up to the present time the town has not been canvassed for subscriptions, the men having bought their own instruments.

SWANSEA.

AS an evidence of the progress that is taking place in Swansea, we find that the office hours there have been extended from 10 p.m. to 1 a.m., and only recently the staff was increased by eight, making a total in the telegraph department of 47. A short time ago, Swansea was connected with a telephone loop-line to Tallywain, Cardiff and Newport being intermediate; this, we may say, is the longest of its kind in the United Kingdom. All things considered, Swansea is decidedly coming to the fore. Our periodical has been warmly received, there being nearly twenty subscribers, which will no doubt increase. Mr. P. Smith is our correspondent there, so we hope to hear interesting items very often.

WATERFORD.

THE usual quarterly meeting of the Waterford Postal and Telegraph Literary Association was held in the Reading Room on the evening of the 7th inst. Through the unavoidable absence of the President, Mr. Carrette, postmaster, the chair was occupied by Mr. Hand, telegraph superintendent. The minutes of the former meeting having been read and signed, the Secretary, Mr. Hayes, explained the present condition of the association. The number of newspapers, periodicals, and magazines subscribed to were now twenty-three, and he was confident the funds, which continued to be most flourishing, would soon permit of further additions. It could then be safely stated that the members would have access to the best current literature of the day. The Librarian, Mr. Mulcatry, had also a favourable report to submit in connection with his department. Though the society was in existence but five years, the books in the library had been constantly increasing, so that at the present time nearly three hundred volumes were under his charge. The chairman congratulated the members on the success their efforts had attained in providing literary food for themselves. Though un-

doubtedly the impetus given to the movement by our worthy postmaster at the formation of the Society was the germ of what he might call the intellectual epoch of this station, still, he must say that it was the untiring exertions and unanimity of the staffs which made this seed spring up so luxuriantly and bring forth such golden fruit. Some discussion took place as to the selection of the most suitable evenings for debates, lectures, &c., during the winter months, but it was decided to leave the matter in the hands of the committee, as in former years. A vote of thanks to the chairman brought the proceedings to a termination.

SOME changes are immediately expected to take place in the Waterford staff, one in the transfer of Mr. W. Somers to the Engineering Department, Cork, and another, it is strongly hinted, in the resignation of Miss Lillie Wall, formerly stationed in Dublin, who, it is understood, will be soon led to the Hymeneal Altar.

WORCESTER.

THE annual dinner of the Worcester Postal and Telegraph Staff is fixed for the 27th of this month (Dec.). Our past experience of this reunion gives us the most lively hope of spending a very enjoyable evening. Many old friends (subscribers, no doubt, to this journal), who are now in other offices, will recall with pleasure the memories of bygone "Feeds" at old "Ums." The first appearance amongst us of the TELEGRAPHIST was heartily welcomed, and has been read with much interest by all. The lessee of our theatre, Mr. W. Gomersal, gave the Worcester people one treat more, by engaging the Royal English Opera Company for December 3, and three succeeding nights, when they produced in succession Wallace's opera "Maritana," "Il Trovatore," "Mignon," and on the concluding evening, "The Lily of Killarney." Among the artists, Mr. J. W. Turner gained great favour in his representation of Don Caesar de Bazan, in which character his fine tenor voice was heard to advantage. This Company have entered into an engagement with Mr. Gye for the winter season at the Royal Italian Opera, London, and lovers of operatic music would do well to pay them a visit.

YORK.

ANNUAL DINNER.—The annual dinner of the Postal Telegraph staff attached to this office was held on Saturday, Dec. 8, at the Elephant and Castle Hotel, when about twenty clerks assembled, and did ample justice to the good things provided by "mine host." The chair was occupied by Mr. J. B. Foster, who had Mr. F. C. Harrison for his *vis-à-vis*. In his opening remarks the chairman hoped that all official stiffness would be suspended during the proceedings of the evening, and trusted that all present would enjoy themselves in a manner which they would not feel ashamed of. After referring to the severe illness which prevented the Superintendent even entertaining the idea of being present, and respecting which he should subsequently move a resolution, the chairman spoke in sympathetic language of the death of Mr. Edwin Bellwood, one of the oldest members of the staff, and said all the clerks would sympathise with his widow in her bereavement, and feel a sense of grief at the sad event which had deprived them of the company of a brother officer. Mr. Foster then gave the health of the Queen, which was loyally drunk. Mr. F. W. Evans next proposed "The Postmaster-General," to whose desire for improvement and reform he paid a suitable tribute. Touching the late revision, he said that whatever feelings might have been called into existence at that time, an all but universal sense

of gratitude to Mr. Fawcett for what he had done for the staff now predominated. Musical honours accompanied the toast. The vice-Chairman next gave the health of the Postmaster (T. Stevenson, Esq.) speaking in high terms of that gentleman's energetic labours on behalf of the department and the public. He believed that Mr. Stevenson's sole aim was to possess a staff which would perform its duties in a satisfactory manner, and he thought he might say that a high degree of efficiency did prevail. In submitting the health of Mr. Oates—the Superintendent—Mr. A. G. Turner said that all would agree with him when he said that the greatest sympathy was felt for Mr. Oates during his present illness. He (Mr. Turner) had had an experience of enforced idleness under the doctor's orders, and he could safely say that for a man of Mr. Oates' active temperament nothing would be worse to bear than confinement to a sick-room. He trusted that he would soon be restored to health, and be amongst them once more. Mr. J. Farrar then proposed "The Surveyor and Staff," of whom he spoke in most eulogistic terms, and the toast was duly honoured. The next toast was that of "Mr. Wardle" (the night superintendent), which was proposed by Mr. J. W. Robinson in a very happy manner. He said that Mr. Wardle discharged his duties in a manner which brought credit to himself and secured the respect of the staff, and he was sure all would regret his unavoidable absence on that occasion. Mr. Robinson concluded by asking his hearers to drink the toast with the usual honours, and the call was most enthusiastically responded to. The toast list was brought to a conclusion by Mr. J. Catley proposing "The Postal Staff" in a few well-chosen words, to which Mr. A. Smith (P.O.) briefly replied. A very hearty vote of thanks was accorded to Mr. Foster for his services in the chair, and a similar compliment was paid to Mr. Harrison. In response, Mr. Foster said that he had greatly enjoyed the meeting, and thought that such occasions cemented the good feeling which existed between officers and subordinates. Mr. Harrison also spoke in a similar strain, being of the opinion that gatherings of that character were productive of good, and not harm. In the intervals between the speeches, songs, recitations, and pianoforte solos were contributed by Messrs. Robinson, Farrar, Catley, Rutherford, Berry, Hamilton, Evans, and Turner, and the reunion ended with the National Anthem. A resolution, expressing sympathy with Mr. Oates, and hoping for his speedy recovery, was unanimously adopted.

Theatrical Chit-Chat.

MESSRS. MASKELYNE & COOKE's entertainment, as deservedly popular as ever, must, we feel sure, not only afford great amusement to most of the audience, but also do a great deal of good in a moral way to some of them. Unfortunately, even though Mr. Maskelyne explains how some of his clever tricks are done, notably the "Davenport Cabinet Trick," yet there are people—Spiritualists—who are so madly infatuated with their childish creed as to still stick to it, although shown the way to do tricks infinitely superior to any ever done by a Spiritual medium. For such people there can be no hope. The little reason they have left must be hopelessly entangled in the toils of some professional humbug. "Thought-Reading"—the last phase of the "marvellous," so publicly advocated by Mr. Irving Bishop—is amusingly exemplified by Mr. Maskelyne and his wonderful automaton Zoe, and although there is not the slightest possible communication between them, the figure writes down almost

instantly any number or letter whispered into Mr. Maskelyne's ear. Howbeit, although Mr. Maskelyne evidently disbelieves in any "Thought-Reading" powers possessed by mortal man, we have, nevertheless, in our own private circle, seen some wonderful effects, the result of experiments, which make us think that there must be a something in it after all, though possibly not so much as claimed for it by Mr. Bishop. The programme ends with "Mrs. Daffodil Downy's Light and Dark Séance," one of the most laughable pieces Messrs. Maskelyne & Cooke have yet produced, in which their celebrated skeleton spirit appears, and sends a ghostly thrill through the audience during its clever and astonishing antics. An entertainment so avowedly anti-spiritualistic must surely have earned the deepest gratitude of many who have been rescued from the roguery of heartless, humbugging "mediums," and so been prevented from ending their days as weak-minded and half-lunatic spiritualists. A creed so foolish must needs enlist "fools" only as its supporters.

Literary Notes.

WE have received from Messrs. Macmillan & Co. a set of those little gems, "The Science Primers," and we heartily recommend them to our studious readers. They are published at the nominal price of one shilling each, and as popular science books they are simply perfect. Send for the "Introductory" primer, by Professor Huxley, and "Chemistry," by Professor Roscoe, and you will never know a day's peace until you order the rest of the series.

THE scientific telegraphist ought to know that the best text-book of their science ever issued is Preece & Sivewright's "Manual of Telegraphy," published at 3s. 6d. by Messrs. Longman & Co. The work is up to date, and in our opinion no telegraphist should be without a copy.

Dots and Dashes.

A PITTSBURG girl, who had refused a good-looking telegraph lineman three times within six months, gave as a reason that he was too much of a wanderer; that he roamed from pole to pole, from one *climb* to another; and if he did come home, he'd be *insulate* that the neighbours would be sure to talk.—*Christian Million Christmas Number.*

AMUSING TELEGRAPHIC BLUNDERS.—One day, in looking over a punched Wheatstone slip, the following amusing substitution of a slang word for its legitimate equivalent came under my notice. "We are sorry to inform our readers that a well-known and very prepossessing young lady has *sloped* with her father's groom." On pointing out the error to the ingenious young telegraphist, he for some minutes seriously argued that "sloped" was quite correct, and signified "bolted," "cut," "run away," &c. However, on my suggesting that the word "eloped" was more appropriate, he quietly subsided. The remembrance of a somewhat similar escapade of my own during my earlier days renders me somewhat forgiving of errors that manifestly do not result from sheer carelessness. I was at the time stationed at a large and important goods station, the manager of which had received a hundred and fifty pigs, the charges on which were unpaid. He tendered them to the consignee for delivery, but they were refused, on the ground that the sender had agreed to deliver them free of carriage. A tele-

gram was sent in consequence, asking for instructions as to the delivery of the pigs. I did not see this telegram, but I received the reply as follows:—"Blister the pigs at once free of charge." Being a very careful youth, I repeated the first word back slowly, thus ————, and received the "understand" signal, showing it was quite correct. I assumed that the manager had on hand a consignment of sick porkers, and sallied out to deliver my message. I delivered it, and had just reached the safe shelter of the office, when the storm burst upon me. A furious rattling at the window and a shout of "Hi! you! young shaver! what do you mean by this? I'll blister you!" "What's the matter?" I inquired. "What's the matter, indeed!" almost shouted the infuriated manager, "I'll teach you to tell me to blister a hundred and fifty pigs!" "But that is what was sent to me in the message," I explained, standing well back from the window; "and," added I, "it was repeated, too." "Well, get it repeated again, quick," and the message was fairly flung at me. Back I took it to the old single needle and asked for the necessary repetition, and judge of my feelings when the well-known clicks spelled out:—"——— I waited for no more, but rushed back to the manager's office with the correction; and for years afterwards blushed scarlet when I saw a pig, or heard of a blister, and the faintest whisper of the word "deliver" gave me a heartfelt pang. L. V.

MAN V. INSTRUMENTS.

As man has so oft been made the object of comparison, we think no harm will arise from our comparing him with several of the "mechanisms" in daily use amongst us.

Thus, a man may be compared to a *sounder* when he is noisy, when his *pecker* is down, and when he has a *screw loose*.

A man may be compared to a *Wheatstone*, as he is often *wound up*, occasionally *run down*, and sometimes *stops short*.

A man may be compared to a *bad wire* when he becomes bankrupt and *fails*.

A man may be compared to a *battery* when he gets a "*refresh*."

A man may be compared to *bad connections* when he is arrested. (When this happens would it be right to tabulate it as a "*copper*" contact?)

A man may be compared to a *disconnection* when he loses a limb or gets into the Divorce Court.

A man may be compared to a *bad balance* when he is seen staggering home from his club.

A man may be compared to *strong resistance* when it requires half-a-dozen policemen to take him to the station.

A football player we may compare to a *puncher*; and, finally, we may compare man to our *wires* and *currents*, for he is often *tested*, *measured*, and *crossed*, and when he terminates his career is *put to earth*. M. D.

DIED, December 16, Albert E. Windley, L. and N.W. Telegraph Department, Stafford, aged 22.

MANCHESTER.—We have much pleasure in announcing to our readers in the North that we have appointed Mr. J. E. Ridgway, 72, Market-street, Manchester, as agent for the TELEGRAPHIST. Advertisements can be received and copies of the journal obtained at the above address.

The Poetical Telegraphist.

—YQ."

"YQ, YQ" (unwelcome sound) strikes on the news clerk's ear. He turns his "switch," gives "G," and knows that work is somewhere near;

And, thus being started on his way, his dreary work's begun By several pages, "C.N. 2," and "general morning, 1." Then comes a lull. He takes his ease till close upon eleven, When "general mid-day, 1 and 2," appears, with "C.N. 7." He takes the morning markets, including "P.A. stock," While "Reuter, classes 1 and 2," reports an earthquake shock;

Then "C.N. 4 and 27" (with breach of promise actions), And all that horrid "C.N. stock" (it's nothing else but fractions);

"P.A. London potatoes" and "LV produce, B," "C.N. 12 and 25" and "P.A. Reuter 3."

Presently he gets a smell of "Ashley's violet" (Which tells of piles of money lost thro' many a foolish bet). Then "P.A. sporting 1 and 2," and "Ashley 'green' and 'red,'"

Run out in one long batch, and almost drive him off his head.

Another rest. He gets his tea; but, after that is done, "YQ, YQ" again he hears, and "general evening 1," Runs through, in one continuous stream, and soon he has a "block."

"Eight pages C.N. 41," and six of "P.A. stock." More "Reuter, classes 1 and 2," and "C.N. 31," And "P.A. verbatim Gladstone" is run through (just for fun);

Then "P.A. Parl'y, 1 and 2," and "C.N. 17," Draw from his lips a smothered "cuss"—he longs for change of scene.

"We're clear, at last," the news clerk sighs, and sits down quite at ease.

He little thinks that "T.S." has for him a few "SP's." 'Tis now just after midnight; he's clear (which very nice is), When, oh! "YQ, YQ" again, with "Reuter's New York prices!"

A few items at intervals; but he'll soon write up them, And then comes what he's longing for, "CQ, SG, GM."

THE CROW.

LOST OPPORTUNITIES.

In times that are passed, full many a lover Was won by the power of electrical fire; There was talking, then sporting, conversing, then courting, Then letters by post followed wooing by wire.

But now things are changing; stern rules are estranging The clerks, and striving all chatting to baulk; Lest somebody choose them, and Government lose them, The staff on the wires are forbidden to talk.

Odd moments of leisure once given to pleasure Are spent in dull idleness now thro' the day; And kept thus asunder, can any one wonder, If patience, at times quite exhausted, gives way?

It is so annoying—one might be enjoying The cosiest of chat with the nicest of friends; But there's always a fear that somebody's near, And taking us down from the "slip" at both ends.

Correspondence.

NOTICE TO CORRESPONDENTS.

The Editor declines to publish any letters containing abuse or personalities. The name and address of the writer must be enclosed, not for the purpose of publication, but as a guarantee of good faith.

Correspondence invited from English and Colonial Telegraph Clerks.

Contributions for the February number must reach the Editor before January 15, 1

to the Editor of the TELEGRAPHIST.

DISCIPLINE IN "T.S."

SIR,—It is nauseating to listen to the petty whinings over what some clerks are pleased to term tyrannous officialism.

If I might take this office as a criterion, the discipline here tends to foster a more manly and independent tone than it would be possible to acquire or attain in the commercial world. It is entirely out of the power of a supervisor—no matter what his antipathies, dislikes, or personal feelings might be—to materially injure a clerk in the good estimation of the powers that be.

Certainly, supervisors can demand explanations for irregularities, but such demands must be on paper. This is a protection in itself, for any complaint without some substance appearing in writing, would read absurd and frivolous.

Then again, supervisors, although allowed to take cognisance of such matters, cannot award the punishment, nor, in fact, even decide whether a fault or error has been committed. That remains for the sub-controllers, and, in serious cases, the Controller.

Every issue thus going before the heads of the Department is, I am sure, a full guarantee that these matters would be justly dealt with.

Some clerks, when rigorously treated, conceive, and even boast, that they are objects of personal animosity to the Controller. One can only laugh at such contemptible and maudlin notions. Have they yet to be taught the ludicrousness of the chief of an important public department entering the lists against insignificant subordinates?—I remain, sir, obediently yours, A. CC.

"T.S.," Dec. 6, 1883.

TELEGRAPH INSTRUMENTS, &c.

SIR,—“Elektron” is right in saying “that the great majority of telegraphists understand little or nothing about the instruments they so skillfully manipulate;” and it is likewise true that a vast amount of trouble and inconvenience are due to this widespread ignorance; but I believe his reasons are wrong. Let us be just. Telegraphists have more time for study, and better means, than formerly, but motive is wanting. In the old Companies’ time an operator who was not a bit of an engineer stood a poor chance of advancement, and our best men were trained under this influence. Things are altered now, in some material respects certainly to the advantage of the telegraphist. It is postal rather than electrical fitness which wins the rewards, and determines a man’s position; and it is no exaggeration to say that the average telegraphist, who tries to make himself useful in postal work, has a better prospect of promotion than the bright student who should set himself to emulate the achievements of Mr. Preece. This may be an anomaly, but events prove that it is true.—I am, Sir, your obedient servant,
AN OLD COMPANY’S MAN.

THE SIXPENNY RATE.—A SUGGESTION.

SIR,—Amidst all the talk and arrangements for the new sixpenny rate for telegrams in the United Kingdom nothing has been mentioned as to the necessity of an increase of salary to the telegraphist.

Now the new scheme will make a great increase of work, and, with the under-handed state of the Department, must necessarily fall very heavily upon the already over-worked staff.

Surely this would really be a good opportunity for re-opening the question of the glaring inadequacy of wages received for the important and heavy work done for the public service.

May I suggest that the much-disputed “Civil Service scale” should once more be pressed forward; and then if a longer day’s duty (a not unlikely exigency) is required, the greater strain

upon those who have to bear it will be fairly recompensed as regards overtime, which cannot be as the scale of payment remains at present.—Yours obediently,
W. D.
London, Nov. 21, 1883.

SIXPENNY TELEGRAMS.

SIR,—Various schemes have been advocated in the daily press as to the number of words which should be allowed in a sixpenny telegram, but if those writers who have argued the advisability of the continuance of free addresses had only a practical knowledge of the subject, I venture to say they would never have recommended the Government to continue a system the privilege of which the public generally have much abused. What telegraphist does not know that the delay caused by the use of immoderate addresses is very considerable? Now it seems to me that very fair addresses may be furnished in ten words, and I recollect that the late E. & I. T. Co. found free addresses of ten words to answer well. I believe that if the public were made aware of the adoption of a similar rule upon the introduction of the new tariff, it would be found that the ten words would be seldom exceeded. Let those interested in this subject take five hundred ordinary telegrams, and see upon what a very small percentage of that number it would have been absolutely necessary to use more than ten words in the addresses. For instance, as a rule, it is only requisite for a sender to give his surname—his full address, in most cases, is known to the addressee, and the name of the town is furnished as the “office of origin.” In many cases the same brevity could be applied to the addressed.

I humbly suggest that the following plan would soon become popular with the public and useful to the department, viz:—

A telegram consisting of not more than ten words in the address and ten words in the text, sixpence.

For any number of words exceeding ten in the addresses, half-penny each, and in the text (after the first ten words) threepence for every five or portion of five words.—I am, sir, your obedient servant,
SOUTH COAST.

SIR,—At a station on one of the principal railways in Scotland, not fifty miles north from Edinburgh, the chief clerk (a lady) has resigned, and her successor (say Miss J.) has been appointed, who I am particularly acquainted with, and have no doubt about her ability, but the way in which the appointment has been made, has, I confess, a little staggered me. Three years ago, Miss J. was second clerk, but she resigned and left the service, and Miss T. was appointed in her place, which position she continues to hold, and she naturally thought (and so did we) that she would have got promotion. However, our worthy Superintendent thought otherwise. Three months ago Miss J. returned to the service, but to a station where she was the only female clerk, and she has now been appointed to the vacant place, the Superintendent giving as his reasons (which may be true enough) that he wished a complete male staff where she was, and that she, having a couple of shillings a week more than Miss T., would, of course, be C.C. If this is what is called “fair play and no favour,” the sooner the laws are amended the better, is the thought of
MINERAL.

SIR,—I should like to make a few remarks on your correspondent “J.’s” letter that appeared in your first issue.

She first states she was at a central office of one of our large towns, and received the sum of 25s. per week. I fail to see, as do many more, how this could be possible, unless this lady performed postal work as well, as it would be impossible for a so-called “Old Telegraphist,” even at T.S., to obtain such a salary; and T.S. clerks are considered to be paid a little better than out stations. Secondly, after resigning she made application to Mr. Fischer, and that gentleman offered her 14s. per week. For this she considered herself very indifferently treated and her good qualities not studied. I certainly don’t think this exactly right and just on her part towards such a high personage.

Why, sir, there are hundreds of beginners at T.S. who are quite capable of reading thirty words per minute on more instruments (in some cases) than they ever saw at some provincial stations, and for this they get no more than was offered to this telegraphist to start with; and if she terms a clerk of four years’ standing an “old clerk,” what would the term be to a twenty or twenty-five years’ hand? She also forgets that we are not paid for our capabilities or grand accomplishments which we may acquire, or the young hands of four years would be in receipt of large salaries, for in many cases they could outstrip the old ones; and the old ones would be getting next to nothing, for very often the latter can

scarcely perform their work in a satisfactory manner, they having had their day in years gone by. Hence it is "Service, and not capabilities." Wishing your paper every success, which it will doubtless get here, as I find out of a "division" of 75 there are 63 subscribers,—Respectfully yours,

F. W. W.

"A" Division, C.T.O., London.

THEFT OF A POSTAL ORDER AT SHEFFIELD.

SIR,—The lad mentioned by your correspondent, "Telegraph Clerk," as having been described in the York Assizes Calendar as a "telegraph clerk" was employed as a messenger at one of the Sheffield sub-offices. No sorting duties are performed at that office. It is evident that the word "clerk" should have been given as "messenger," and the alteration is no doubt due to a clerical error.

S F. L. C.

THE TELEGRAPHIST: A VINDICATION.

SIR,—Not many months ago that wholesome tendency of John Bull to bully his servants at becoming intervals, acting in conjunction with the restless activity of the press, which is never at a loss for something to attack, singled out and selected as their common scapegoat the telegraph operator. Then was commenced a direful rout. Nothing was too bad for the telegraphist to have done. He had rendered messages ridiculous and meaningless; he had caused the recipients to lose money; he had made "the most frightful hash of foreign words;" and editors, correspondents, and letter writers alike, relentlessly heaped coals of fire on his devoted head. He was abused and he was ridiculed. One exasperated businessman was desirous of making him a criminal. It were absurd to suppose that the case was at all exaggerated; on the contrary, it was stamped with the genuine seal of the dictum of the ponderous London "Daily," and the conclusive sarcasm of the *Slocum-Super-Squash Diurnal Pennyworth*. After this there could be no mistake. Moreover, did not certain semi-comical journals, delighting in fragmentary titles, indulge in puling witticisms at the telegraphist's expense? Many were the amusing representations—more or less ingenious—of his blunders which went the round of the papers, but which were nearly all inventions upon the face of them.

Far be it from me to overrate the significance of a careless jest, but that it is no light matter for the skill and efficiency of the collective members of an important industry to be impugned with levity by the public and the press, cannot be seriously denied.

Now, I maintain that, though errors do occur—and these, unfortunately, perhaps, of grave character—yet, considering his environment and the conditions under which he works, the telegraphist is, on the whole, a creditable performer; and a good word should be spoken in his behalf.

It is often supposed that telegraph manipulation is something like driving a steam-engine—that when messages are handed in, they are seized by a machine and *flashed* through some unearthly process to their destination. Those of my readers who have ever worked over a bad wire, know how far this is from being the case. Of the tedious details—the monotony, the perpetual translation, transmission, and re-translation of word by word, letter by letter, and the persistent wrestling with faulty signals, the general public can form no conception. Again, the well-trained telegraphist must possess far more than a smattering of knowledge concerning many subjects seemingly extraneous to his profession. To conduct his business satisfactorily he is required to be well informed on the current events and topics of the day. It is necessary for him to have not only a superficial acquaintance with the names of every racehorse, member of Parliament, and steamship extant (with other items far too numerous to even hint at); but he must be able to instantly conceive the name of such horse or ship when represented, say, by a Z and a wriggle of the pencil; and he must know sufficient of the sentiments of any M.P. to fill up, with facility the frequent gaps wherein the reporter relapses into illegibility. He must not blunder over the phraseology of the Stock Exchange or Money Market, and he needs a wide comprehension of business terms and commercial abbreviations. All this, and more, the Telegraphist is equal to—in short, beyond a journalist, I do not know of any employment which exacts more general information than his own.

It is not the intention here to claim for the Telegraphist any great share of public admiration, nor to praise him unduly. There have been very bad telegraphists. So also have there been snowstorms in the summer.

Now, how many persons so ready to upbraid the handiwork of the telegraphist, could defend the manner in which their own sweet

messages are despatched? Without any betrayal of official confidence, I may venture to remark that the spelling of the average sender is unique. Bad French is indulged in upon occasion, and were it possible to publish some of these missives, I am sure it will be agreed that a more diverting collection than they would comprise has never been submitted to the world. Then their calligraphy, too, is usually remarkable; and when, added to this, a carpenter's pencil or a desperate pen is employed in their production, the combination is complete.

But it is not the illiterate sender, principally, who complains. It is the man of business, who, while he despatches and receives nine hundred and ninety-nine telegrams without an accident, is exasperated to excess by a little error in the thousandth. Yet let him consider what are the conditions of the service. A mighty web and network of frail wires spread across the surface of the country and embracing its farthest extremities; stretching over solitary moorland, and dreary coalfields—tracking the long, silent roads, and crossing rivers—suspended high in the air, or sunk beneath the pavement; and all the while maintaining their continuity, so that communication may exist between any two points in the whole twenty-five thousand miles of their extent. During the day, and, partially, the night, in every direction—passing each other to and fro in perpetual streams, a constant flow of telegrams is circulating throughout the vast and intricate maze of the stupendous network, like blood corpuscles in a giant's system.

Some messages have to be signalled, received, and re-transmitted half-a-dozen times when travelling over circuitous routes; and it is here the danger of an error lies. The only wonder is that telegrams sustain this sifting so well; for the long wires passing unprotected through the air are subject to many atmospheric influences. Hardly at any time is the whole kingdom enjoying clear weather; and the violence of the wind, with the chemical properties of the rain, will always play fantastic tricks. Think what a simple thing will interrupt the stream of signals; how a little water, or the momentary contact of any conducting substance with a wire, may effect rapidly succeeding currents, upon the precise duration of each of which the formation of a letter or portion of a letter depends.

It has been said that anything wrong about a message should be detected by the telegraphist who deals with it, and that he should be guided by its *sense*. If that were practised, I fear a large number of the public messages would never reach their destination at all; for succinct lucidity does not figure conspicuously among them—many being really stupid.

After the compulsion to continually transmit what is plainly written, but manifestly a mistake, how can the telegraphist be very discerning when a glaring telegraphic error does occur? It is my opinion, though it may seem bold, that the case is but another version of the story of the shepherd boy's false alarms; and that the telegraphist having so frequently raised the question to find that, after all, it was merely a sender's error, and hesitating to create delay and excite the impatience of his colleague, often passes over doubtful words which he would otherwise have been prompted to inquire about. Thus revisiting the sins of the public upon their own heads by compelling a few to suffer for the careless many.

But the learner—is not he responsible, in his inexperience, for many blunders? Well, to some extent it is natural he should be; but, fortunately, he has little opportunity of distinguishing himself in that direction, because the managing authorities are chary of entrusting difficult or important duties to his charge.

Taking, then, all in all, the demands, the difficulties, and the performance, the immense number of messages transmitted faithfully and faultlessly; not only might the Telegraphist's maligner pause to think again, but could he see and understand; could he witness, as I have done, the delicate female sitting still and statue-like, with the thundering rattle of the little sounder beating rapidly and incessantly upon her ear, she translating its swift clatter into the most pretty flowing handwriting, and pleasantly producing forty messages an hour, without cessation for protracted periods; did he know that a young lady could remain day after day, week after week, month after month, keying with a celerity and precision approaching that of the automatic transmitter, piles upon piles of lengthy press work; and that while a town was being thus supplied with all this news, she who signalled it was steadily persisting in an overburdening and complicated exertion which was to result in a serious strain of the muscles of the arm. I say, that were he cognisant of all this, he must admit that that which is accomplished in the aggregate is a wonderful and a beautiful consummation.

Should the contemptuous one after all remain incredulous (although it is no object of mine to support any cause in particular, beyond the common desire of redressing an injustice), I might be tempted to repeat to him, with just a trifle of asperity, that pretty simile of a living novelist "The Glow-worm and the Frog."

EDWARD H. JONES.

Central Telegraph Office.

The West London Schools of Telegraphy and Electrical Engineering,

101, UXBRIDGE ROAD, LONDON, W.

A few minutes' walk from the Stations of the Great Western, South-Western, London and North-Western, Metropolitan, and District Railways. Tram Cars and Omnibuses pass the door every five minutes.

COMMERCIAL DIVISION.

LADIES and Gentlemen prepared for the Telegraph Service, and instructed in office duties.

The instruments are perfectly new and made after the latest P.O. patterns. Pupils who learn upon these instruments will be able to take engagements either in the principal Telegraph Stations or at any of the Suburban and Provincial Post-offices.

In addition to the working of the apparatus, instruction will be given in the various signals, prefixes, affixes, codes, and abbreviations now in use; and learners, when competent, will be presented with Certificates, and recommended to the Chiefs of the Telegraph Department for vacancies. There are nearly 6,000 Postal Telegraph Stations in England, and vacancies are of almost daily occurrence.

The demand for skilled Telegraphists is now far greater than the supply; but when the sixpenny tariff comes into operation next year, the entire staff will be increased about twenty-five per cent.

CHARLES READE, D.C.L., THE EMINENT AUTHOR, ON THE WEST LONDON SCHOOLS OF TELEGRAPHY.

3, BLONFIELD VILLAS, UXBRIDGE ROAD,
June 20, 1883.

I have been long acquainted with the Senior Principal of the West London Schools of Telegraphy. He is a devoted lover of science and a public writer on scientific subjects.

He is a Telegraphist of long standing, and well able to teach the use of the various instruments.

I happen also to know what high prices and unfair advances are often obtained from pupils in Telegraphy, especially from females; and I think it a boon to persons of that sex, and to the public, that the Principal of the West London Schools of Telegraphy offers to teach Telegraphy, as other arts are taught, in a straightforward, honest way, and on fair terms proportioned to the advantage any able, industrious pupil can derive from so able and zealous an instructor.

CHARLES READE.

ALL Certificated Pupils who have learnt at these Schools have entered the Service *without delay*.

NO CERTIFICATES ARE GIVEN TO INCOMPETENT CLERKS.

Ladies and Gentlemen who attend the West London Schools of Telegraphy are not merely taught how to send and read words on the instruments, and then left to find out the actual duties of the Postal Telegraph Service for themselves. They are properly instructed in the minute details of Commercial Telegraphy, and when they receive their Certificates they are competent to take charge of a wire without further trouble.

Postmasters may rely on the competency of Ladies and Gentlemen trained at these Schools; but if there is any doubt about the speed of an applicant for a situation at a country office, a P.O. official will examine and report on the proficiency of the said Clerk.

Prospectuses, Opinions of the Press, Testimonials, and Terms may be obtained on application to the Principals—

101, UXBRIDGE ROAD, LONDON, W.

ENGINEERING DIVISION.

THE Principals of the West London Schools of Telegraphy and Electrical Engineering are now prepared to receive young gentlemen to qualify for the honourable and lucrative profession of Electrical Engineering. Anxious parents who are hesitating over the choice of a profession for their sons ought to bear in mind the fact that the age of Electricity is about to replace the age of Steam. The great Electrician, Sir William Siemens, promises that "this new agent will shortly accomplish quantitative effects rivalling those produced by steam-engines, hydraulic accumulators, and compressed air."

Now is the time for young gentlemen to learn all they can about this power, which is to supersede steam, for the profession is not yet overstocked, and the day is not far distant when the demand for Electricians and Telegraph Engineers will far exceed the supply.

CURRICULUM.

CHEMISTRY.
ELECTRO-CHEMISTRY.
PHYSICS.
ELECTRO-STATICS.
ELECTRO-DYNAMICS.
MAGNETISM.
ELECTRO-MAGNETISM.
MAGNETO-ELECTRICITY.
ACCUMULATORS.

THE THEORY OF THE CONSERVATION OF ENERGY AND TRANSMUTATION OF FORCES.
THE TELEPHONE AND THE ELECTRIC TELEGRAPH.
TELEGRAPH CONSTRUCTION (Batteries, Instruments, and Lines).
TESTING AND LOCALISING FAULTS &c. &c.

Engineering pupils will have the use of an Electrician's bench and tools for constructing batteries, galvanometers, electro-magnets, induction coils, and model telegraphs, thus enabling them to acquire a sound knowledge of the practical as well as the theoretical applications of Electricity.

Pupils will be received one month on trial, and Certificates granted as soon as they are competent.

The theoretical and indoor practical parts of the training will be taken by the Senior Principal, and the construction and outdoor work by an eminent Telegraph Engineer of thirty-seven years' experience.

The Electrical and Scientific Appliances and Instruments used at these Schools are of the latest and most approved construction: as employed by the various Government Departments, and are manufactured and supplied by Messrs. H. & E. J. DALE, the eminent Electricians, of 26, Ludgate-hill, and 4, Little Britain, E.C.

Opinion of a well-known Physician and Scientist.

215, UXBRIDGE ROAD, W.

I have much pleasure in testifying to the Senior Principal's thorough knowledge of Telegraphy. He not only understands the science in its practical bearings, but is intimately acquainted with the literature of the subject. One of my sons has been under his care for some time, and the progress made by the young man, who is about to enter the profession of Engineering, is more than satisfactory.

E. R. TENISON, M.D., late R.N.

For Terms, &c., apply to the Principals—

The Telegraphist

A MONTHLY JOURNAL FOR

Postal, Telephone, Cable, and Railway Telegraph Clerks.

LONDON: TUESDAY, FEBRUARY 1, 1884.

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Grand Contest of British Telegraphists.

IMPORTANT ANNOUNCEMENT.

THE Proprietors of THE TELEGRAPHIST, in order to encourage and stimulate the great body of manipulators in this country, have decided to offer a Prize of a

SILVER CUP

for the quickest and best sender on the Morse Key. The contest to be held on FRIDAY, FEB. 15, and following evenings, at

THE WEST LONDON SCHOOLS OF TELEGRAPHY AND ELECTRICAL ENGINEERING, 101, UXBRIDGE-ROAD, W.

The competition will be open to all Telegraphists—Postal, Cable, and Railway—but no ladies or gentlemen who have left the service will be permitted to compete. The following rules must be strictly adhered to:—

1. Each competitor will be allowed three rubs out of not less than three A's in length.
2. Six badly-made letters will entail disqualification.
3. A Double or Single Current Key can be used at choice.
4. An Entrance Fee of One Shilling will be charged, and the amount collected will be divided between the first, second, and third best senders; therefore, the Winner of the Cup will receive a third of the entrance money.
5. The names and addresses of the Champion Sender and the second and third best transmitters will be published in the March issue of THE TELEGRAPHIST, and a place of honour will be reserved for their names in the pages of "The Practical Telegraphist."
6. One of the T. S. staff will be appointed as Judge.

The Editor ventures to suggest that each large town ought to be represented at the contest. There is a crack "sender" in every office, and the expenses of the gentleman the clerks elect to send to London might easily be subscribed for by the staff at a trifling sum per head.

The names of the ladies and gentlemen who intend to compete, and the entrance fees, must be sent in at once to the Editor of THE TELEGRAPHIST.

The Cup will be exhibited at Messrs. H. & E. J. DALE'S, 26, Ludgate-hill, several days before the contest.

SUBMARINE TELEGRAPHY.*

By W. H. PREECE, F.R.S., M.Inst.C.E.

WE have now no less than nine cables crossing the Atlantic—eight in the North Atlantic, and one in the South Atlantic. We have cables coming around the Peninsula, along the Mediterranean, down the Red Sea, across the Indian Ocean, away through the Archipelago to Australia, and from Australia to New Zealand. From Singapore they go northwards through Hong Kong to Japan, and away through China and Russia back to England. We have wires coming down through the West Indies to the Gulf of Mexico, and connecting the West Coast of America. The result is that there is scarcely a spot throughout the whole world that is not in intimate connection with England. To carry out this tremendous undertaking £30,000,000 have been expended, and there are no less than 80,000 miles of cable at the bottom of the ocean. I remember twenty-three years ago reading a paper*—my first paper—before this Institution, and I ventured to promulgate the unheard-of doctrine, that we ought to make ourselves as acquainted with the bottom of the ocean as we were with the surface of the land. The president of that evening—not always distinguished for his courteous manner—gave me a very severe rebuff for daring to promulgate such an outrageous notion before this Institution. But, gentlemen, we have since sent ships to every sea. Her Majesty's ship *Challenger* has spent three years in surveying the depths of the ocean. She has found that there is a "life," and a real life, "in the ocean wave," and "a home in the rolling deep," and she has found that the deep "unfathomed caves of ocean" do bear "gems of purest ray serene," and she has brought back to us a knowledge, not only of the life of the ocean, but of the nature of the bottom, so that we can now say that we know more of the depths of the ocean than we do of the surface of many a continent on this globe. The result is that cables are now designed to suit every depth and bottom, and the operation of laying a cable has become a simple matter. The Telegraphic Construction Company, who laid, not the last cable, but the cable, I think, of 1880, across the Atlantic, succeeded in laying it without any hitch, without any stoppage, in the incredibly short space of twelve days. Again, repairs of cables have become equally a simple matter. A fleet of twenty-nine ships is maintained in different parts of the world to keep our cables in order. The cables can be brought to the surface from any depth. The 1869 cable, of which I have a specimen here, was brought to the surface from a depth of 1,940 fathoms and repaired; that cable is now thirteen years old, and is working as well as on the day after it was laid. A cable in the Bay of Biscay has been picked up from a depth of 2,700 fathoms and repaired. I am, therefore, justified in saying that cables have become a solid property, and that their age, their estimated age, has increased considerably from what we took it some few years ago—namely, ten years—to certainly fifteen or even twenty years, and British capitalists are now justified in investing their money in such enterprises as this map displays, which I look upon as one of the greatest glories, if not the very greatest glory, of British enterprise.

We have some remarkable accidents in cables. You would scarcely conceive it possible that a cable could be destroyed by fire; yet we have had an instance where a cable was destroyed by fire. Some idle boys lit a bonfire

* Extracts from a lecture delivered at the Institution of Civil Engineers. By kind permission of W. H. Preece, Esq.

† Minutes of Proceedings Inst. C.E., vol. xx., p. 26.

on the beach, immediately over the shore end, and the heat melted the gutta-percha and broke it down. We have had a cable broken by a bull; a mad bull rushed vehemently down the streets of Yarmouth, in the Isle of Wight, into the harbour, and got entangled amongst the wires there, and broke a submarine cable. In the Indian Ocean a cable was found broken, and when they went to repair it they brought up a whole whale. The whale had got entangled in the wire. The whale was dead, and so was the cable. Again, we find little treacherous animals attacking wires, such as teredos, zylophaga, limnoria, and a few other little creatures of that character, which bore into the cable, reach the copper wire, and break down the cable, and the result is that strenuous measures have to be taken to protect cables from these villainous opponents. The cables that are now laid in depths liable to the action of these teredos are armour-plated; the gutta-percha is coated with a thin taping of brass; and microscopists and physicists have yet to find a little wretch that will pierce its way through brass.

TYPES OF THE PRESS TELEGRAPHIC CORRESPONDENT.

I.

OF all writers, the "Sporting Correspondent" is the most persistent user of what is called fine English. He commences in this wise:—"The morning was delightfully fine and invigorating. Old Sol freely shedding his bright, refugent beams o'er the old town and the far-stretching, verdant meads that surround it. A gentle zephyr soon dispersed a slight mist that hung o'er the course, and complacency entered our breast when we thought that for once this meeting would be favoured by auspicious weather—that Jupiter would not shake his ægis." With him a "famous horse" is an "equine celebrity," a "young jockey" a "juvenile equestrian," a "good one" is "a clever exponent of the art of riding," "rain" is "the pluvial element," "sunshine" "the smile of Phœbus," and so on. But the real business of his life is to guide the public in their selection of a horse on whose chance of success they invest their money. This is how he does it:—"For the Handicap to-morrow Colossus, the favourite, should, on his private trial, win easily; but I cannot forget that on more than one occasion he has run very unkindly. Still, with such a light impost, if he does not curl up, he should secure the race; but, he being such a rogue, I cannot support him. Shifter has had a long rest, and his trainer informs me that he has much improved in speed. His stamina is undoubted, but I think his welter weight will be too much for him. Without considering Wagga Wagga anything like a smasher or gem of the first water, I am not inclined to fall in with the views of those who declare that he cannot possibly win, for his past running gives him a fair passport to success. Craigbush may make amends for his moderate display in the Highlow Handicap. I, however, fancy most the leniently-treated Breadbasket, who will appear at the post in the pink of condition. He ran prominently in the Spinaway and Fenwater Handicaps, and has now much advantage in the weights over his then conquerors. I shall, therefore, select Breadbasket as the winner, and he will probably be closely followed home by Wagga Wagga. Should these two be beaten it will be by Shifter, unless, indeed, a thorough surprise is in store for us from that mysterious outsider, Cake o' Banbury."

The greater number of sporting correspondents are very bad caligraphists, but that does not excuse the operator who the other day signalled "the rainy season will be brought to a successful termination to-morrow," and "the entries being numerous, the spirit will be good."

JAYGEE.

HIS TROUBLE.

HE was a tall, sinewy man, with a hatchet face, and eyes that had a far-away and penny-a-mile look about them. There was evidently something on his mind, for at times a smile as sad as the reflection of the youth who knows that his jam-tart will disappear with the next bite, flickered over his intellectual countenance, while at others he shook convulsively and gazed distractedly into vacancy. I knew who he was: he was the editor of *The Evening Refresher*, a local paper which purported to give the inhabitants of our town the latest news of the day, and the proprietors of which had, with a spirit of enterprise equal to that which nerved that unknown ancient who first tackled the slavery oyster, arranged with a London Press Agency to supply them with, amongst other things, descriptions of races at various meetings.

"I want to know," he said, "whether it is possible to bribe the lunatic who wrote these messages to retire into obscurity, or whether he has received a commission from some enemy of the human race to make his fellow-creatures as mad as he is himself."

Thinking that the hot weather had proved too much for him, and fearing to excite him more, I thought it better to turn the subject, and, in my mildest tones, politely asked him whether he thought the recent rise in the price of butter would cause a strike amongst the railway engine-cleaners. I might as well have spoken to the wind.

"Mr. Spriggins," he said, "read these two messages. Read them aloud, so that I may know that my eyes have not deceived me, that my brain is still as sound as before these two sheets of tissue were put into my hands."

I took the fimsys and read:

"Marble Park.—Stoneshire Stakes.—Hammerhead, 1st; Nothing else, 2nd; Passed the Post, 3rd. 4 ran."

I was going on with the other, but he stopped me.

"Hold on a minute," he said, "while I think;" and then he repeated, "Hammerhead 1st, Nothing Else 2nd, Passed the Post 3rd; 4 ran," and was beginning again, but checked himself with an effort. "I am now calm," he said. "Proceed."

I then read from the second fimsy:

"LAMMERMOOR TWO-YEAR-OLD HANDICAP.—DESCRIPTION.—Doctor Johnson got clear away at the start, but was soon overtaken by Sleepy Solomon, who made all the morning and won by a week. Time, 2 mins. 26 secs. by Benson's chron."

"Well," I said, "it is evident what is meant. All you have to do is to read 'running' for 'morning' and 'neck' for 'week.'"

"That's just it," said the editor. "How could anyone but a double-barrelled patent loading lunatic write down such drivelling bosh? But I feel better now. I was afraid that my brain was getting out of gear, but I see that the only intellect that wants to be taken out and cleaned is that of the genius who is responsible for this hash."

So saying, he left the office and walked down the street with a step as jaunty as that of a telegraphist on payday.

PAFF.

Prize Sketch.

No. 2.—“MM—MH.”

IN the “good old times” of some thirty years ago, under the *régime* of the “Old Electric Company,” the above “instructions” were the delight of the clerk who received a message bearing them just as he was going off duty, as it gave him, and perhaps one of his comrades, a chance of a blow in the open air after they had finished their “dot and dash” task for the day, or more probably for the week; as such messages generally turned up on Saturday evenings after the provincial offices were closed, and involved a ride into the country of several miles, which was generally sufficient to induce some free clerk, or clerks, to accompany the “man and horse” to the destination of the all-important missive.

On some occasions the livery-stable keeper, or owner of the horse and trap, would insist upon sending a driver; on other occasions, if he were satisfied the clerks could manage alone, he would allow them to do so, but in this case, of course, all responsibility of accidents to horse or trap had to be borne (as in the former case) by the *driver*; consequently it was safer and more politic to let the owner supply the driver himself, which was done in the majority of cases, and thereby the responsibility of making good all damages was avoided.

In the springtime of 185—, a message of this description was received at Mathoopsnut, a few minutes after the office at Sechtwiner was closed on Saturday evening. Its purport was to announce the death of a friend, and to request the *destinataire* to go at once. The distance to the supposed locality where this message was to be delivered was about ten or eleven miles,—a beautiful drive for a fine spring day. By the time the horse and phaeton could be got ready it was close upon 9 p.m., and then, in the fast-fading twilight, the writer and his companion mounted with our solemn, sad message to seek the unknown locality and still more unknown house.

Crack went the whip,
Round went the wheels,

and we were soon off the stones of the busy town, and entering upon the high road to London, wide and smooth, over which we travelled quickly in the direction of Sechtwiner.

Darkness soon set in, and under avenues of trees the road could with difficulty be perceived, and at times it was almost impossible to even distinguish the horse's head. However, we drove on until we drew near to the distance where we expected to find the rev. gentleman whom we sought.

The road became very lonely, and scarcely a house to be seen on either side of the road, and, as for foot-passengers, there were none. Still pursuing our course along the high

CHARLES READE, D.C.L., the distinguished author of “Never Too Late to Mend,” says:—“I have been long acquainted with the Senior Principal of the West London Schools of Telegraphy and Electrical Engineering. He is a devoted lover of science and a public writer on scientific subjects. He is a Telegraphist of long standing and well able to teach the use of the various instruments. I happen also to know what high prices and unfair advances are often obtained from pupils in telegraphy, especially from females; and I think it a boon to persons of that sex, and to the public, that the Principal of these Schools offers to teach telegraphy, as other arts are taught, in a straightforward, honest way, and on fair terms proportioned to the advantage any able, industrious pupil can derive from so able and zealous an instructor.” Send for a Prospectus and the Opinions of the Press to the PRINCIPALS, WEST LONDON SCHOOLS OF TELEGRAPHY AND ELECTRICAL ENGINEERING, 101, Uxbridge-road, W.—[ADVT.]

road, we came at last to a wayside inn, just as they were closing up for the night, and, having made the necessary inquiries as to the whereabouts of the house we were in search of, we received a most complicated explanation of the direction we were to take—viz., “straight on for a mile or so, then turn sharp to the left, down a narrow road for several hundred yards, then a narrower lane on the right, down which there was a carriage-drive, which would lead us to the house.” Having learned this lesson by heart, we left the lighted bar, and emerged into the darkness, which appeared worse than before. As we proceeded more slowly, each one strained his eyes to discover the “sharp turn to the left,” but all was black alike, and no branch road could we see for a long time. At last we fancied there were some signs of a stone pier or gate-post, and, by dismounting and examining it closer, we discovered it was really a “sharp turning to the left.” To some extent relieved by this discovery, we turned off the main road to seek for the “narrower lane on the right.”

The road was far rougher than the high road, and we jolted along very slowly and cautiously, for it was too dark to see anything, and difficult to keep in the middle of the road, but we arrived by degrees at the lane, with trees on both sides, which (if it were possible) increased the darkness, and the driver had to get down and lead the horse as best he could. Not a soul was to be seen, nor a body either; not a sound was to be heard but the feet of our horse and the noise of the wheels. Neither house nor light could be seen anywhere around. Still we went onward looking for the “carriage-drive,” and wondering what could possibly induce any one to live in such a dark, dismal, out-of-the-way place. All at once something loomed in the distance, not far off, which proved to be the gateposts of the long-looked-for “carriage-drive.” We entered the gate, and, following the drive, were led by it to a house, where all was dark and still as death.

At the unearthly hour of one o'clock in the morning the sound of the knocker echoed and re-echoed through the surrounding woods, well calculated to disturb the nerves of the most daring, and in such a locality, too. What could be the meaning of such an alarm, at such an hour?

No answer to the first knock, so it was repeated, and again the woods re-echoed the sound. Still all was dark, but we fancied we heard a sound in the house. Suddenly a light appeared in one of the bedrooms, figures flitted to and fro across the window-blinds, and at last footsteps were heard approaching nearer and nearer still to the hall-door.

“Who's there?”

“A telegraphic despatch brought from Mathoopsnut for the Rev. ———, which requires an answer immediately.”

Upon this explanation the door was unfastened, and we were admitted inside whilst the message was read, and the reply written and handed to us, with the usual charge of one shilling per mile for the delivery.

Our mission so far accomplished, the next thing was to get home. But how? Here we were in darkness that could almost be felt, and to grope our way back to the high road was no joke. The temporary light in the house made the darkness outside more visible, but, fortunately, we had been favoured with dry weather up to this, and we fondly hoped it would continue.

Slowly, slowly, we groped our way back, reversing the lesson we had learned by heart, and felt a great sense of relief when we found ourselves once more on the high road from London to ———.

Having now more room and a better road, we travelled more quickly, but our horse began to give signs of weakness, and evidently required *baiting*, rather than *beating*, to

put life into it. So, having reached the before-mentioned "wayside inn," we were compelled to stop to give the horse a "bait" and a rest. As for ourselves, we had partaken of neither "bit nor drop" since our tea on Saturday, about 6 p.m., and it was now near 2 a.m. Sunday, and we began ourselves to feel "rather peckish." After some difficulty we succeeded in awaking the ostler, and availed ourselves of the "good stabling for horses," and, having comfortably provided for our steed, we began to think about ourselves. "And now, Mr. Ostler, let's have something to eat and drink for ourselves." "Nothing to be had, gentlemen." "But we *must* have something, we are famished and hungry." "Can't help it, gentlemen, but the missus is a-bed, and everything is locked up." "Can't you possibly get the key and let's have something to eat, bread, cheese, biscuit, or anything you've got in the house?" "Don't think I can get anything for you to-night." "Can't you tell the missus there are some travelling gentlemen here who must have some refreshments at once, and ask her for the keys?" "I'll see what I can do for you, gentlemen."

Mr. Ostler disappeared, and shortly after he returned with bread, cheese, and beer sufficient for our purpose, and, having satisfied ourselves with these, we stretched ourselves on some clean straw in the stable, and awaited the dawn of day.

Meanwhile, the dark, black, heavy clouds had accumulated until, no longer able to hold their watery charges, they sent down their contents in a drenching rain, with no prospect of abatement. With a forlorn hope we waited and waited, but it still poured in torrents, and, having secured an early breakfast, we started off, amidst the heavy downpour, on our way back to Mathoopsnut.

The road was a most delightful one, and, but for the rain, it would have been a most enjoyable drive. The woods on each side exhibited their delicate shades of green leaves, the chestnut-trees were blooming most beautifully, and now and again a hare or wild rabbit would dart across the road, and birds were singing joyfully in the wet trees—all calculated to make up an enjoyable scene but for the unwelcome rain.

We had all become drenched to our skins, as if we had been dipped in a mill-pond, and the phaeton was flowing with water about our feet, when suddenly the rain ceased, and shortly afterwards, when within a couple of miles of home, the sun began to smile upon us, and to render our drenched appearance more conspicuous.

When we entered the town of Mathoopsnut, like "drowned rats," we had the pleasure to hear the church bells ringing, calling all good people to their devotions, and we were, of course, the "observed of all observers," much to our chagrin, on such a "nice, sunny Sunday morning."

Whilst all those good people were wending their way to church or chapel, little did they think of the night's toil and adventures through which we had passed whilst they had been "peacefully slumbering" on their downy pillows. Hastily driving to the Telegraph Office, and depositing the precious "RP," we were only too glad to retire to our virtuous couch, and "do a good sleep," after removing our wet clothes.

Such, my readers, is one of the pleasures arising from the delivery of messages with an MM—MH.

OLD ELECTRIC.

BIRTHS.—Jan. 13, at Brighton, the wife of Mr. F. Cox, telegraph superintendent, of a son.—Jan. 21, the wife of Pool Field Davis, telegraphist, London, of a son.

WATERLOO L.S.W.R.—Messrs. A. H. Bush and G. A. Goulden, of Waterloo Telegraph Department, and Mr. C. D. Mundy, telephonist at Nine Elms, have left the service for Valparaiso, to join the West Coast of America Telegraph Company.

The Telegraphist Abroad.

SLEIGHING ALONG THE LINE.

BY ODIN.

THE Indo-European system between London and the Persian capital traverses a route which, at many points, commands some of the most varied and picturesque scenery in Europe. It is not our intention, however, in this paper to invite the reader to accompany us through a description of the imposing grandeur of the Caucasian passes, or even through the soft summer scenes and luxuriant vineyards of the Taurida. How can one write of purple vineyards with the thermometer at 25 deg. below zero (Réaumur)? At a future and more genial season we may return to the subject and transport the reader to the sunny eastern sections of Caucasia, Tchercasia, Mingrelia, Georgia, and the far Iran. At present we are attached to the Indo staff at Zhitomir, the capital of the old Polish province of Volhynia, and thither we are travelling in the Russian mid-winter. *Chacun à son goût*: but, despite the almost Siberian cold, the writer finds infinite enjoyment in the manner and means of his present locomotion.

We left the Polish capital *viâ* Brest-Litovsk some twenty-two hours ago, and we are arrived at Jerusalem! No, we are not in Palestine, heaven save the mark! In truth, we are so far orthodox Russian in our nomenclature in thus designating Berditcheff, which is, *par excellence*, the most essentially Jewish town in Europe, the dirtiest and most disreputable agglomeration of human hives, containing 60,000 inhabitants, which appertains to the Russian Crown. We have alighted at the Hôtel Europe, and have scrambled, at the risk of our necks, up a dirty, winding flight of stone steps, each one of which is coated with ice an inch thick, and find ourselves in a dilapidated, draughty, and malodorous apartment, in which we are unfortunately compelled to pass the night. We will not, however, detain the reader with any description of the *menu*, the sparse accommodation, and extortion of this vile hostelry.

The distance hence to Zhitomir is some forty-five versts, through forest and woodland, a rugged, unkempt highway. But then we have the deep, hard snow, and it is wonderful how many difficulties are literally smoothed over by this dispensation of the wintry elements. It may be observed in passing, as illustrative of the tardy progress of many Russian provinces, that here are two towns of considerable commercial importance, each containing over 60,000 inhabitants, and separated only by some thirty English miles, which not only lack railway communication, but are not even connected by an ordinary *chaussée*. All this, however, is strictly characteristic of modern Russia, whose capital and chief cities adopt the latest fashions, manners, customs, and vagaries of western Europe, whilst the interior, and even many populous centres, are a century behind in the manner of their administration. And this, too, under the *régime* of a Minister of Ways and Communications! But we must not digress into Russian political economy and forget that other handsomely-salaried Russian official—the Press Censor!

Our *troika* (a three-horse sleigh) is at the portals of this gloomy caravansary, brought up by a more primitively fashioned baggage-sleigh. Attached to the headgear of each horse is a bell, whose constant tintinabulation reminds one of Edgar Allan Poe's "Bells." We regret to have forgotten the silvery rhymes on the tinkling sleigh-bells.

And now, bewrapped and befurred, and fortified with a *vade mecum* of French cognac, and cold chicken

and ham in the boot, we are merrily spinning our way out of this evil-smelling, modern Jerusalem, whose inhabitants, with their greasy, long-tailed gabardines and jack-boots, their oiled forelocks and unwashed persons, impress us most unfavourably. The speed and staying-powers of the small wiry horses are wonderful. We are bounding along at a tremendous pace, with a brilliant sun overhead, and a wide expanse of glittering snow all around, which, at first, rather painfully affects the eyes. The motion of the sleigh rising and falling, and dancing over the inequalities of the well-sleighed track, has a most exhilarating effect. One feels as if the blood were dancing in unison through one's veins. Our *istvostchiks* (drivers) appear to hold an almost uninterrupted address to the willing horses; at one time addressing them in the most endearing terms, and again, on the slightest sign of their flagging, assailing them with the most frightful imprecations. We change horses at two intermediate post-stations, the first of which we have now reached—a small one-storied, many-gabled, thatched shanty, almost buried in the deeply drifted snow, and with a large courtyard and stabling in the rear. There is scarcely anything edible to be obtained at these stations. If, however, the traveller be provided with tea, he may always obtain boiling water from the never-failing *samovar*, and a scantily-furnished, but clean and well-warmed, waiting-room. The next section carries us through a forest track. The scene is fairy-like in its cold brilliancy. Every branch and twig thickly enamelled with the frozen snow; the trees arched, and meeting overhead; the sun glinting and sparkling, and casting weird shadows; the cries of the *istvostchiks* reverberating through the silent forest, and the unceasing music of the bells falling on the clear frosty air, all combine to make this means of travelling—to the writer, at least—extremely enjoyable. We cry a halt, and regale ourselves and the *istvostchiks*—whose beards and moustaches, by-the-way, are now frozen in solid ice. We roll and light our cigarettes, and, as the blue smoke slowly and curlingly ascends on the keen, crisp air, and as each spoken word calls up a hundred echoes from the forest depths, we feel strangely and almost oppressively affected by the unnatural stillness.

Fperjod! (forward) cry the *istvostchiks*, and we are again flying through the dazzling wintry forest glades. Out in the open, we are approaching a straggling village, whose presence, now doubly buried in valley and snow, is indicated from a long distance by the green cupola and gilt cross of its church. In entering this village and crossing an antiquated stone bridge, we catch a glimpse of village maidens washing at the stream below. In sheer astonishment we call a momentary halt to observe the scene. The temperature, as we have already stated, is 25 degs. below zero (Réaumur), and the ice on the river beneath us is some 15 or 18 in. thick. These laughing and sturdily built village maidens, bare-footed and bare-legged to the knees, with tucked skirts, have broken the ice with ponderous axes, and, standing upon the huge icy boulders, are washing as vigorously and merrily as if it were a summer sun which shone and sparkled on the plashing waters.

After leaving the second post station, we are belated, owing to an accident to the baggage-sleigh, and are still some 10 versts from our destination when the evening shadows overtake us. It is still twilight, and our horses are pulled up to a walk in ascending a slight eminence, when the sudden snorts and restiveness of the animals attract the instant attention of the *istvostchiks*, who spring to the heads of the leaders, one with his heavy whip clubbed, the other armed with a short-handled

axe. They peer intently forward through the uncertain and deepening twilight. The restiveness of the leaders has now apparently communicated itself to the horses in the baggage-sleigh, who in the meantime have come abreast of us. We immediately alight and take their heads, hurriedly inquiring of the *istvostchiks* the cause of this extraordinary halt. "Wolves," is the reply, and again they are silent and watchful. We regret now not having purchased revolvers in Warsaw or Berlin. The next moment, from the thick underwood to the left, and not more than twenty-five paces in advance, trot, or, rather, sneak out seven wolves, leisurely and in Indian file. The shaggy brutes eye us warily as they cross our path and disappear towards the neighbouring forest, vanishing like uncaunty shadows in the deepening gloom of the closing day. Somehow this incident and the moonless night and strange road have considerably abated the buoyancy of our animal spirits. It is all very well for the *istvostchiks* to apostrophise the "sneaking, cowardly dogs" as they vanish. We are three and unarmed, and the intelligent tactics of these seven fanged marauders, were they so disposed, might have caused us some rather embarrassing attentions. Either the wolves had already dined well, or they are gone to the forest lairs to acquaint their friends with our presence and we shall be ambushed further ahead. Our fears happily are groundless; our horses, as if conscious of some danger, are flying along at their best, and already we catch the twinkling lights of the town before us. We instruct the *istvostchiks* to be guided by the wires overhead, which, in the icy breeze now sprung up, make humming, æolian music.

We are arrived from "Jerusalem" and have alighted at G. M.

The Railway Telegraphist.

"TIED TO TIME."

By C. F. C.

IN the year 18—I was sole booking and telegraph clerk at the small town of Halpiton, through which the G.W.R. line ran, and my duties, although by no means arduous, were of so monotonous a character that I cannot look back at the old time without a shudder. But at that period I had got tolerably used to my uneventful existence, and, with the help of Smith's bookstall, I managed to pass the intervals between DB's, DL's, and TA's.

I was very fond of literature, or even this only form of recreation must have grown irksome at last; but, as it was, I read day and night whenever I had a moment to spare any book that the good-natured stallkeeper had by him.

At this precise epoch of my existence, however, I had even managed to do without reading for some time, going off at a tangent and becoming devotedly fond of its foster brother, "writing."

I had become engaged, and was—as most young fellows are when first "taken that way"—as happy as ever I was in my life. In brief, I had succeeded in winning the affections of the pretty, good-natured, and accomplished daughter of the postmaster of our little town.

Mary was only nineteen, with bright blue eyes—but, there, what's the good of telling all her virtues to those who can't appreciate them? Suffice it, she was perfection in my eyes.

It was a dark, wet, miserable afternoon in November, as I sat moodily thinking in my office. I was particularly sad that day, for Mary was going to leave us for a fortnight's (it seemed ages to me) visit to some friends in London, and was to start by the 6.40 p.m. train that evening.

As I sat musing, I thought I heard some one open the door cautiously and then as carefully close it again. The occurrence would probably altogether have escaped my notice if I had not raised my head a moment afterwards, and caught sight of a man peering in at the office window. I can see the face now, a repulsive-looking figurehead, with a slouching cap. But more of him anon.

And so I sat until about half-past six, when the first arrivals for the train put in an appearance, and I had to get the tickets, and hold myself in readiness for anything that might occur.

There were not many passengers that night. But there was one big man, Lord —, a Cabinet Minister, who had his country seat some four miles from the town, and he soon drew up in his carriage and pair, with his powdered footman, and there was a slight stir among the few present as my lord walked on to the platform, and lighted his cigarette at the bookstall. "First single to London," exclaimed the footman, throwing a sovereign on to the counter; "and, if you please," he continued, "could you telegraph to Warburton, and, if possible, secure a first-class compartment for his lordship?"

This little matter was soon attended to, and now a fair, slight form, muffled up in furs, approached my ticket-window, and a soft voice said, "Two second single to London, please, Harry."

"Oh, Mary," I answered, "I do wish I could come with you;" and then, as I handed her the ticket, I gave her hand *such* a squeeze. But we hadn't much time for talking, and, with a parting kiss, Mary went to join her mother on the platform.

A moment afterwards the shrill whistle of the approaching train warned me that in a few minutes the one I loved most would be whirling away to London, fifty miles an hour.

Could I see her just for one moment more? Could I but get one more kiss? Dare I leave the office?

These were the thoughts that flashed through my brain in a moment, and I peeped through the blinds up the road to see if there was any one coming likely to want a ticket.

But all was pitch dark and I could hear nothing; so, with a hasty look at the clock, I rushed out of the office, turned the key in the door, and got on the platform just as the train steamed up.

I was soon by Mary's side, and, in spite of her loving injunctions to get back to the office, I saw her and her mother safely into their carriage, and had just time for another kiss when the guard came up and slammed the door in my face. How I hated that guard as the train went off with a whistle that seemed to mock me!

The little white handkerchief soon disappeared, and I was left alone on the damp platform.

Slowly I turned towards my office, but as my hand rested on the handle of the door it was suddenly flung open, and a man with a thick cloak enveloping him hit me violently in the face, knocking me completely over; and then, before I had time to get up, he had disappeared.

I should have followed him, but I felt quite dazed; and, besides, the darkness would have effectually prevented my being able to capture him, and so with a growl, at my stupidity in leaving the key in the door, I went into the office. My first thought was the cash drawer, but I was agreeably and greatly surprised to find the money untouched. Apparently not a farthing had been disturbed, and I proceeded with a much lighter heart to signal the train's departure to the next station, which was about twelve miles away, named Beechwood.

The train did not stop here; ran on some fourteen miles further before doing so.

But how shall I express my intense astonishment when I found my needle would not move. I held the handle in a tight grip, and tried again and again to call Beechwood, but not the slightest deflection took place, and for a moment I felt quite bewildered.

The next moment, however, I stooped down to see if any of the battery wires were disconnected, but as I did so my eyes became rivetted on the figure of a man crouched in the little space there was beneath my desk, and I at once recognised the same man who had looked through my window. I'm no coward, and the next moment I had him firmly by the collar and on his back on the floor.

The struggle was a long one, but at last finding me his master, the fellow, with a smothered oath, ceased his efforts and allowed me to drag him as he lay into the small parcels room opening into the office.

This room had no window, and was more like a large cupboard. Here I flung him off, and before he had time to rise I had turned the key in the door. "Now then," I exclaimed, "we can have an explanation of all this. Doubtless you know something of that ruffian that knocked me down just now. What are you? What do you want here?" Getting no reply, I said, "Well, we'll ring up the porter, and send for the police."

But the man, evidently afraid that his last chance was gone, called out, just as I had got hold of the bell-rope, "Stay a bit, sir. I'm safe 'ere anyhow. Yer'd like to know summat I could tell yer?"

"Out with it then!" said I; "or I shall not wait a second."

"But you must let me go free," replied the fellow with an insinuating air; at the same time I could see he was trying the door.

I soon set the bell going, and the old porter, who had been

toasting over his stove in his room on the opposite platform, put in an appearance.

"Go at once up to the police-station, Jack," I said, "and tell Sergeant Pendhurst to come here at once, with a couple of men. There are robbers here."

Jack needed no second bidding, but was off in a second.

And now I knew I must wait nearly twenty minutes before any one arrived; so I once again turned my thoughts to the needle.

But the man called me again. "What's the time, sir?"

"6.35," I replied; "and at 7.0 you'll be safe in the policeman's arms."

"There's time yet," continued the man, anxiously, "if yer can only do it."

"Do what," I replied, somewhat alarmed at the fellow's language.

"Look ye here, sir," he burst out a second afterwards, (influenced by the fear of hanging, as I subsequently discovered). "Look ye here, sir, yer've just time to do it, if yer can. They be agoing to wreck the express to-night the other side of Beechwood, in the Daisy Cutting, and if yer can stay the train afore it goes through Beechwood yer'll save it, if not—mercy on their souls."

The man paused, but with my heart in my mouth I exclaimed, "Go on; what do you mean? I don't understand you."

"Mean," continued the fellow, "why, my mates, the Fenians, swore to kill that cursed old fool, Lord —. We knew as how he left here to-night, and they be a-going to wreck the train, that's all. We had doubts of our chum, Bill Withers, as how he'd blow the gaff on us, and our Cap'n thought it best to cut them wires, or do summat to prevent yer tallygraffing. It were he knocked yer down. I only come here to help him."

The whole position now flashed on my mind.

But what cared I for train, passengers, or Cabinet Ministers? Was not Mary—my Mary—in the train, now dashing on to destruction, and in a few moments, perhaps, she would be a corpse.

The thought was terrible, and as I gazed in anguish at the clock I saw it was 6.47.

The train was due at Beechwood at 7 o'clock. Two hundred yards the other side of that station was the signal-box, and then the train, if it passed it, would enter the Daisy cutting, and be dashed to pieces.

All now depended on my being able to find the fault in my instrument (if there), remedying it, and signalling to Beechwood to stop the train, and I had only *thirteen* minutes to do it in. With a despairing cry, I rushed to the instrument, and was down on my knees at the battery-box in a second.

Oh! how I blest the man who had written books on telegraphy.

How I blest Smith's bookstall, and the clerk in charge, who had once lent me Preece and Sivewright's book to read. I didn't know much, it is true, but Mary's life hung on what little I did, and I commenced to run systematically over wires and connections.

The battery connections were all right, but it was *twelve minutes to seven*. Now for the instrument. The case was off in a second, and my eye ran over the terminals, but all was right. *Eleven minutes to seven*.

With a bit of G.P. wire that was lying handy I short circuited my instrument, and the needle worked with powerful signals.

"Ah! the line is cut," I almost shrieked. Up or down? In a second I had one side to earth, and, to my horror, I found that the breach was on the up line between my office and Beechwood, and my darling was in the UP train!

Nine minutes to seven! Out of the office I dashed like a maniac. In less time than I can tell it I had cleared the platform, crossed the metals, and was inside the porter's hut. There lay the linesman's tools and two or three pieces of galvanised iron wire. I seized a piece of the wire, and dragging out the ladder used for lighting the lamps, I sped along the six-foot, straining my eyes towards the wires in a hopeless and almost mechanical way, for it was almost pitch dark. As I neared the home signal, however, my eyes fell on the end of the severed wire dangling not more than a foot from the insulator.

To put the ladder against the pole and mount to the wires was the work of an instant, and roughly, but effectually, I made a joint with the linesman's piece of wire and completed the circuit.

Leaving the ladder as it was, I bounded back to the office as the hands of my clock pointed to *one minute to seven*.

A dreadful sickness came over me as I offered DG, and I saw my needle ticking away correctly.

I sent, in the station-master's name, "*For Heaven's sake stop the express, and save it being wrecked. Sleepers on line.*"

As I received the acknowledgment, my clock struck *seven*, and I sank fainting on the floor.

I heard afterwards that men were sent on ahead, and about a mile from Beechwood a pile of sleepers and iron chairs were found

across the metals; so that without doubt an awful accident would have happened if the train had not been stopped.

I was only just in time. The lights of the engine were visible when I first telegraphed, and as the express came dashing past the signal-box the man had only just time to throw the danger signal up right in the very face of the engine. But all's well that ends well.

The police soon arrived, and the ruffian I had locked up was safely lodged in gaol, and, with his *confrères*—who were afterwards captured—sentenced to long terms of imprisonment.

Mary was saved. She is now my wife; but even she does not know the agony I went through in that quarter of an hour, and no one can know, who has not experienced it, what an awful thing it is to be in danger and

TIED TO TIME.

[The author of the above story does not wish to compete for the Guinea Prize.—Ed. TEL.]

Literary Notes.

WE have received from Messrs. Kegan Paul, Trench, & Co., "The Modern Application of Electricity," by Julius Maier, an excellent descriptive work, printed on splendid paper, and profusely illustrated with woodcuts so beautifully executed that the diagrams explain themselves. Every kind of telephone and the latest modifications of the dynamo are carefully and accurately described. The compilation of this work must have been a laborious task to the writer, and we trust that the demand for "The Modern Application of Electricity" will fully realise the expectations of both author and publisher.

"ENERGY IN NATURE," by W. Lant Carpenter (Cassell, Petter, & Galpin) is one of that class of books which ought to find its way into the hands of every student of popular science. Following in the footsteps of his illustrious father, Mr. Carpenter has produced a clear and exact definition of the term "energy," and his book may be styled the key to the comprehension of the conservation of energy and transmutation of forces.

FROM the University Press we have received "Elementary Electricity," by the late Clerk Maxwell. We think the title of this excellent work rather misleading, for very few persons who were not mathematicians could understand the greater portion of the book. For advanced students "Elementary Electricity" will have its attractions.

"ELECTRICITY AND ITS USES," by J. Munro, C.E. (The Religious Tract Society), is a plain description of the various applications of electricity in popular language. It is a work that will give great satisfaction to the unscientific student for whom it was written. The illustrations are good, and the price is within the reach of the humblest member of the service. Mr. Munro has been wise in omitting mathematical formulæ, and his book ought to have a very large sale amongst telegraphists.

MESSRS. LONGMAN have forwarded us a copy of Culley's celebrated "Handbook of Practical Telegraphy," also Professor Fleming Jenkin's "Electricity and Magnetism"; both works may be regarded as Classics by the Electrician and Telegraph Engineer. In our day every scientific telegraphist possessed a copy of Culley's handbook, for then Mr. Preece's inexpensive and excellent work was not written. We are glad to learn that Mr. Culley is still in good health, and resting upon his well-earned laurels at Weston-super-Mare.

Dots and Dashes.

TELEGRAPHIC ERRORS DUE TO IMPERFECT SPACING, AND EASILY MISREAD.

ALTHOUGH I am not a smoker, I agree it is a shame to sell bad shag either at *Wien* or *Aden*.

On an unknown date *Dan* was about to be blistered when, urged by his mate, he delivered the man a blow.

Mr. *Cade*, the mineral-water man, does a good trade.

In *Frome* the frog has a quiet home as well as the hog.

When at *Epsom* the clerk stated that the betting at the *Grand Stand* grated on his ears.

With steady study a fortunate man may fill his cases with cash, but with others, however much they may *fan* fate, few perform this feat.

The piping of Scottish *Macs* makes the lassies of every faction arouse from inaction, and romp like Roman maidens.

The enemy came round, but was routed, and after passing through *Exeter* was pursued to the death at *Bath*.

Every good actress can obtain access to a theatre.

Between *Beyer* and the buyer there was a slight difference about selling the seedling.

In this wheel the cog won't come right whether I hew it or heat it, although it is new and very neat.

The machine ran at a great rate, and bored an inch into the rock.

The coals and cords were put into the bow of the boat, and when the lady was ready we pushed off, and tried to get there in time to meet the steamer.

The cording and coaling being finished, Messrs. *Hardt* and *Harz* gave orders to sail.

A prig, with a prime lot of booty, and out of breath, got beneath the floor, and tried to press the cellar grating to obtain egress.

A novel feature in the future will be to find a pew made of compressed peat.

I forgot the name of the nay, but she travelled well to the ruins, where we found some urns in the earth.

OLD ELECTRIC.

TELEGRAPHIST going home late, after Christmas day, sings:—"Ohm, ohm, sweet ohm," &c., &c.—A. E. S.

A YOUNG lady, after reading the "Dots and Dashes" in the last number of the TELEGRAPHIST, confessed to her "duplex" her first blunder in the service. Being placed at a Sounder duplex which was missing a lot that day, she received a telegram ordering "two dozen leeches by evening train." Guess of the sender's feelings when, instead of two dozen luscious peaches he received a jar of the creeping, crawling things!

The Poetical Telegraphist.

CHATTING ON THE WIRE.

THERE'S pleasure in courting at home or abroad,
In whispering love to the girl we admire,
Be she Alice or Susan, or Ethel or Maud;
But give me a chat with a lass on the wire.

The horrid young brother, whose vulgar remarks
And mischievous tricks cause to lovers such ire,
Ne'er comes in the way with his juvenile larks
When I'm having a chat with a lass on the wire.

To say "dearest love" to a girl to her face
Sets my own in a flame and makes me perspire;
But bashful emotions have in me no place
When I'm having a chat with a lass on the wire.

"My angel," "my darling," "my pet," and "my dear,"
Are sent through as quickly as heart can desire;
'Tis well that the governor's not always near
When one's having a chat with a lass on the wire.

P. F. D.

THE PLEASURES (?) OF A NEEDLE CIRCUIT.

THOSE horrid Single Needles, with their signals "right" and "left!"

After working one an hour, of senses I'm bereft.
First I get a station, who can neither "read" nor "send,"
And it takes full twenty minutes before I reach the "end"
Of the message I am sending, when he finds the "number" wrong,
And moralises on it for goodness knows how long.
Then he finds he is mistaken, and has counted one line twice,
Sends "Rd," and blandly asks me, "If his reading isn't nice?"
There's the "Single Needle Demon," who has nothing else to do
But to argue by the hour on the "Code he offered you."
He's a caution, I assure you; any saint I think he'd vex,
For if I offer code "LA," he's sure to have "LX!"
Again, there is the "member" who thinks it is no crime
To call up twenty times a day and always ask for "Time";
And, being willing to oblige, I give him "Time," of course—
But I feel I'd like to hit him with "electro motive force."
Sometimes I get "The Growler," with the same old set remark,
Which is either "Do read better" or (to vary it) "Get clerk."
The "Growler's" very common—you'll find him everywhere;
As a rule, his style of working close inspection wouldn't bear.
When the "Growler" and the "Demon" start quarrelling 'tis bad,
For my work's accumulating, and I'm almost driven mad.
Job was blessed with lots of patience, but this virtue he'd have missed,
If he'd only worked a needle with a bad Telegraphist!

THE CROW.

Editorial Notes.

We have to thank the many ladies and gentlemen who have ordered the "Practical Telegraphist," and we hope that the book will fully realise their expectations. We must not miss this opportunity of directing attention to the fact that the "Practical Telegraphist" will be of great value to all persons using British and foreign wires. Our many friends and contributors will be doing us a service by pointing out to the merchants in their towns the time and trouble to be saved by having such a work always at hand. All telegraph clerks ought to send their names for the Directory. As the book will, like the TELEGRAPHIST, circulate wherever the British T.C. has penetrated, old friends will be looked for eagerly in the pages of that portion of the "Practical Telegraphist."

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THE telegraph engineers and members of the Association have been admitted to the "Electrical Directory," but no telegraphists' names are to be found in that excellent book. The question has been frequently asked, "Why has no one come forward to publish a telegraphists' directory?" We have responded to the appeal, and at our sole risk we are now publishing the coveted work. Surely the majority of British T.C.'s will respond to our appeal, and save us from actual loss! At some of the large stations the whole of the staff have sent in their names for the "Directory" and ordered copies of the book as well. Those who trusted us on the faith of the prospectus of the Journal have expressed their satisfaction in complimentary terms, and we intend to fulfil all our promises in relation to the book. In America the operators have a literature of their own, and there is no reason why the British telegraphists should not have their organ, their scientific manuals, and their library of fiction. Unity is strength, and if the telegraph clerks of this country will unite and support the Editor of this Journal, he will do for them what Mr. Johnston has done for the operators across the Atlantic; and the day may not be far distant when the telegraphist will look with pride at the volumes on his bookshelf written by his literary colleagues, and published at the office of his powerful and world-famed Journal.

+ + +

IN order to make room for an increased number of "Provincial Items" and "Correspondence" we have again increased the size of the TELEGRAPHIST from 16 to 20 pages. The article "Telegraph Instruments and How to Use Them" is unavoidably crowded out this month, but we hope that Mr. Preece's interesting notes on "Submarine Telegraphy" will more than compensate for the omission.

+ + +

Two bogus paragraphs having found their way to the columns of this journal, we have determined in future to consign to the waste-paper basket all anonymous contributions, no matter what their merit may be. The TELEGRAPHIST is intended to amuse and instruct, not ridicule,

The Hire-Purchase System of Furnishing conducted by NORMAN & STACEY commends itself to all classes. It combines real economy on sound commercial principles, with strictly private arrangements, and is free from all the objectionable formalities which attach to dealers and others. No interest or fees are charged, and payments can extend over 1, 2, or 3 years. The wholesale firms embrace the best manufacturers, who have large stocks for selection, and no additions are made to the ordinary selling prices. Intending purchasers should call or send for particulars.—Offices, 11, Queen Victoria-street, E.C.—[ADVT.]

telegraph clerks. The two paragraphs in question have wounded the feelings of several persons, including a lady at "T. S.," and we regret that the writers, whoever they may be, had not better sense than to make us the medium for practical joking. In future, every paragraph must be signed by our acknowledged correspondent or the gentleman who holds the reporter's card.

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WE are receiving enough contributions to fill a weekly journal double the size of the TELEGRAPHIST. All the copy sent to us cannot go to press, therefore many good things have to be set aside. Whilst thanking our supporters for their kind aid, we must also ask them to treat us with forbearance, and not be angry because they do not see their productions in print immediately after sending them to the office. Every scrap of MS. is carefully examined, and pieces of merit are put aside until space can be found.

+ + +

THE third Prize Sketch has been accepted, and will appear in our next issue. The author (one of the night staff at T.S.) has introduced a slight plot, and we are certain that his story will please the ladies. When the third Prize Sketch appears, the voting-papers must be sent in before the 15th of the ensuing month, and a cheque for one guinea shall be forwarded to the winner. Other competitors may then enter the lists.

+ + +

NUMEROUS complaints have been received from various parts of the country about the delay and difficulty in obtaining the TELEGRAPHIST through the ordinary trade channels. The great firm of Smith & Sons delivered No. 2 at one of the London termini *eleven days after publication!* This is what comes of a big monopoly. We have written to the manager informing him of the absurd delays; but that gentleman (!) evidently thinks us beneath his august notice. Query.—Does the late First Lord of the Admiralty know how Government *employés* are treated by the executive of No. 161?

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OUR subscribers can be quite independent of the trade if they wish. We are willing to send one dozen or more copies direct from the office on the day of publication, post-free to any town in the United Kingdom. Our correspondent will receive the parcel, and distribute the copies to the clerks. All the large towns, with two or three exceptions, adopt this course.

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IN case of delay, and to avoid misrepresentations, we beg to inform our many supporters that the present number of THE TELEGRAPHIST was published on Friday, January 25.

CHEAP TELEGRAMS.—Owing to the influx of work that is expected to accrue from the adoption of the cheaper rate of telegraphing next October, the Post Office authorities in London have issued instructions to the manipulating staff to conclude the holiday season this year by the end of September, so that all may be in their respective places ready for any contingency that may arise when the cheap telegrams commence. The first half of the new floor that is being added to the Central Telegraph Office is fast approaching completion, and is expected to be ready by October.—*Daily Telegraph*.

THE SIXPENNY TARIFF.—Bewildered Postmaster: "Where shall I get another Telegraphist from, when the sixpenny tariff comes into operation? The work will be more than doubled, and I have only one clerk." The answer is—Send to the WEST LONDON SCHOOLS OF TELEGRAPHY AND ELECTRICAL ENGINEERING, 101, Uxbridge-road, W7., where ladies and gentlemen are thoroughly trained in Commercial Telegraphy, and office duties.—[ADVT.]

T. S.* Items.

THE DEPUTATION TO MR. FISCHER.—On the 9th Jan. a deputation from the T. S. Day Male Staff, comprising Messrs. Paffard and H. D. Gill, of the "A," Messrs. G. Druitt, Gerard, and Gordon of the "B," waited by appointment upon Mr. Fischer, the Controller, to present a petition praying for the abolition of the system of alternate long and short weekly duties—i.e., ten hours the first week and six hours the next—that has for some time been in force in the galleries. The deputation was received by the Controller in his characteristic kind and gentlemanly manner. He expressed himself at the outset as being fully in sympathy with the object his petitioners had in view. He admitted the many inconveniences and physical strain associated with the application of the duty, but regretted his inability to accede to their request, on the ground that his doing so would cause a deficiency of something like 200 clerks in the gallery during the forenoon, and a corresponding redundancy of staff later on in the day. He then went on to say that the duties complained of had only been decided upon after considerable thought on the part of himself and the sub-controllers, there being only two alternatives open to them—either to have a split duty, as at provincial stations, or introduce one, consisting of eleven and five hours every alternate day, and that in his adoption of the present system he had been actuated solely by the wish to conduce towards the conveniences of the staff. Replying to a point raised by the deputation as to the duties being unequally shared in certain divisions, he said he would give instructions to see that the duties were divided with impartiality, and also that their application should be as seldom as was absolutely compatible with the exigencies of the department. He also hoped that, with an expected large increase of the male staff, the necessity for the duty would cease to exist. After thanking the Controller for his kindness in receiving them, and the sympathy and good feeling he had evinced throughout the interview towards the staff, the deputation withdrew. On the morning following the presentation of the petition, Mr. Gordon was sent for and favoured by the Controller with a perusal of his report, on the interview in which he embodied the assurance given the deputation, that those duties should be kept at a minimum.

APPROPOS of the deputation. Any of your readers gifted with a turn of mind for solving legal conundrums will find ample scope for exercising that faculty in the document known as "Fawcett's Scheme." Should they succeed in making anything definite of the latter part of Clause VI., they will be in considerable advance of the deputation, for whom it proved as eloquent of meaning as Carlyle's "Sartor Resartus," or Browning's "Sordello."

ELECTRIC B. AND A. CLUB CONCERT.—On Saturday, Jan. 12, the second concert of the Electric Bicycle and Athletic Club was given at the South Place Institute, Finsbury—a sort of Pantheon, judging from the names inscribed round the walls, and the peculiar text over the platform. There was not so good a house as we expected to see, and that may account for the delay in "ringing up." At 8.30, Mr. J. McGuire and a lady entered arm-in-arm, looking so terribly dismal that for the moment we fancied ourselves in a mortuary chapel, and Mr. McGuire, overcome with emotion, being led to the rostrum to deliver a funereal oration. The programme announced a trio, but the third artist only turned over the music for the pianist. Having sounded his A, Mr. McGuire brightened up a bit, and scraped away in real earnest. His rendering of "Poet and Peasant" was creditable, but he was on the brink of a discord more than once. At the finish he lapsed into melancholy again, linked his partner in woe, and slowly retired behind the screen. Mr. Brown next appeared, and sang the "Toreador Song," from Bizet's opera "Carmen." We heard Carleton sing it when "Carmen" was played at the Italian Opera, but we hardly recognised it again. Probably we have no ear for music. The third item was a recitation by Mr. J. Grant, a gentleman very popular at T. S. as an athlete, but, judging from his declamation, gymnastics are more in his line than reciting. Why did he select Schiller's "Diver" when simple pieces like "Little Jim" were available? When the Diver had disappeared never to rise again, Mr. F. Evetts proved himself a very able amateur pianist. There was a slight hesitation in his execution, but that may have been the result of nervousness. Mr. O. Bathurst, the tenor vocalist, may style himself an amateur, but we refuse to acknowledge him as anything but a professional. He charmed us with his rendering of "Tom Bowling," and the audience proved their good taste by stopping the concert until Mr. Bathurst had delighted them with another song ("The Woodpecker"). Mr. Hobday gave a good performance on the English concertina, and Mr. F. Evetts displayed

considerable vocal ability in his rendering of "The Unfinished Song." Mr. G. Thompson gained thunders of applause for his buffo song, "She trotted me off to Church." I presume Mr. T. ought to be styled the "Lion Comique" of the evening. We were very pleased to find our old friend Mr. Bloxam in such good form. We heard rumours about hoarseness, sore throat, &c., but we failed to detect anything of the kind. Mr. Bloxam recited Edgar Allan Poe's difficult poem, "The Raven," with ease and effect. This did not surprise us, for we witnessed his performance at the Ladbroke Hall a few weeks back, when he proved himself a very able comedian. We hoped to see Mr. Brandon and our genial friend the Banker; but, alas, they were hammering away at T.S., instead of amusing the audience at the Pantheon. That notorious villain, "Sir Phillip," was lurking about the back of the chapel, plotting some foul deed; and, as we made our exit, he exclaimed, in tragic accents, "We shall meet again at Philippi."

Provincial Items.

ABERDEEN.

THE telegraph staff at the Granite City numbers 53 (including a dozen female operators). By all accounts it seems to be a very harmonious one, there being a cricket club, football club, and literary society, all composed solely of telegraphists. The literary society, which is sometimes graced with the presence of the ladies, who, however, have been as yet "silent spectators," opened its session a few weeks ago, the first contribution being a paper from the president, who is superintendent of the department. The postmaster holds the office of hon. president. The cricket club has had a very successful season, on one occasion having had a friendly match at Arbroath with a team from the Dundee office. On Friday, the 22nd, the members of the same club held their ball in the Imperial Hotel. The entertainment reflected great credit on the committee of management, everything being of superior style. During the supper hour, Mr. Jas. Shirreffs and Mr. Wm. Noble were presented respectively with a bat and a belt for displaying the best batting and bowling throughout the season.—[Received too late for insertion last month.—ED. TEL.]

BARNESLEY.

THE annual dinner of the Barnsley Postal and Telegraph Staff was held on December 28, 1883, when thirty-four sat down and did justice to the good things provided. The postmaster (Mr. McClement) was called to the chair, and in his opening remarks said he was glad to see the same faces once more, with the exception of two or three, who, he was happy to say, had not gone over to the "majority," and concluded by proposing the health of the "Queen," which was drunk with usual honours. Mr. Pierrepont next gave the health of Mr. and Mrs. McClement and family, and spoke in eulogistic terms of the energy which Mr. McClement brought to bear on all matters appertaining to the welfare of the staff, and, in conclusion, he called upon all those present to drink their healths with musical honours, and the call was most enthusiastically responded to. Mr. McClement thanked them on behalf of himself and family for their good wishes to his family, and for the manner in which their healths were drunk, and hoped he would have the pleasure of meeting them on many such occasions. The intervals between the speeches were filled up with songs and readings, which were creditably rendered by Messrs. McClement, Pierrepont, Shaw, Dickinson, Huggins, Fleetwood, Bramwell, Ellis, Taylor, and Charlton. The Misses McClement also very ably rendered pianoforte duets. Thanks were also given to the musicians (Messrs. Rogers and Foster) for their valuable assistance. Dancing was kept up until 4.30 a.m., when all dispersed.

BELFAST.

THE numerous friends of Mr. Alfey Orr will be glad to hear that he has been recently promoted to the first class in the postal department of this office. Mr. Orr's promotion was most deserving, as he has been performing very arduous duties in MOO for the past twelve months. His good fortune has created the greatest satisfaction here, where he was most popular.

BRADFORD.

THE strain which is usually put on the Post Office employees during the Christmas holidays has this year been very great, the resources of that dépôt being taxed to the utmost extent. Although the number of Christmas and New Year cards were almost double that of any previous year, the work was got through without a hitch.

* Central Telegraph Office, London.

THE Bradford Telegraphists' *soirée*, consisting of a tea, concert, and ball, to be held on January 24, promises to be a great success. This is the first affair of this kind held here, and we learn from the committee, who are using every effort to make it a success, that nearly the whole of the tickets have been taken up.

BIRTH.—On January 12, the wife of Clarence Leach of a daughter.

BRISTOL.

OBITUARY.—It is with deep regret we have to announce the death of Mr. R. R. Brookman, of BS, on Nov. 30. He was only 29 years of age, and had the appearance of a man upon whose life one would feel safe in taking a lease. But the fell destroyer, being no respecter of persons, seizes the young as well as the old, the strong as well as the weak. The deceased was known to the Plymouth and Exeter staffs in connection with the Bristol Cricket Club, which was started in 1871, and had an honourable and victorious existence for eight years. The cream of our staff being gradually absorbed by foreign companies, the club terminated its career in 1879. On Good Friday, 1874, BS played a Plymouth eleven at Exeter, under the captaincy of Mr. George Bradbeer, who subsequently left the service for Alexandria; he was succeeded in the post by Mr. Hazel, whose abiding place now is St. Pierre, Newfoundland. The following Good Friday we played the EX team on their own ground, EX playing the return match at BS on the succeeding year. Mr. Brookman was one of our best players, and evinced great interest in all matters pertaining to athletic sports and out-door exercise. Over thirty of his fellow-clerks followed him to the grave, and deep sympathy is manifested for his sorrowing relatives. We regret to say he neglected to insure his life in the Postal and Telegraph Benevolent Society, which was founded by Mr. Asher, of Northampton, in 1875, and of which Mr. Belcher, of TS, is now the Secretary. The society has already paid over £25,000 in benefits, and has a membership of nearly 9,000. We heartily recommend every eligible officer in the service to join this excellent institution, for no one knows what a day may bring forth. [This report arrived too late for our January issue.—Ed. TEL.]

BS DESIRES to thank NT, BM, EX, and PY for Christmas and New Year's cards, and heartily reciprocate their sentiments.

CARDIFF.

THE YOUNG LADIES' LITERARY CLUB.—A meeting of this club was held on Tuesday evening, Dec. 18, for the purpose of presenting Miss L. Thomas with a handsome silver cruet in recognition of her services as Secretary. After tea, which was provided by the Secretary, the President (Miss James) made a short but interesting speech, in which she made several beneficial suggestions, and having alluded to some official matters, proceeded to make the presentation on behalf of the female staff, eulogising the indefatigable exertions of Miss Thomas, and expressing the hope that in years to come the little token of their esteem would recall pleasant thoughts of the days spent in the Telegraph Service and in their company, and remind her of her dearest friends. Miss Thomas thanked her fellow-clerks for their kindness, and said she should ever treasure the gift as a *souvenir* of their friendship, and the many happy days they had worked together. Miss Baiss and other members then spoke, and the evening was spent in a convivial manner.

DERBY.

At the annual meeting of the Telegraph Sick Benefit Society, the contribution to which is 1s. per lunar month, it was decided to raise the amount in time of sickness from 8s. to 10s. per week, the subscription remaining unchanged. The society has a membership of twenty, and although it has been in existence but two years, there is the goodly sum of £23 standing to its credit. Mr. J. Pountain was re-elected secretary for the ensuing year.

At Christmastide and the New Year we were the recipients of seasonable compliments in the shape of cards and telegrams from our brother officers at Birmingham, Cape Town, Hull, Plymouth, &c. We heartily reciprocate the kind wishes expressed.

DONCASTER.

On Wednesday evening, Jan. 9, the staff of the Doncaster Post-office (nearly fifty in number) dined together at the Wellington Hotel. Owing to the fact that the bulk of the mails are not despatched until a late hour, it was nearly ten o'clock before dinner was served. An excellent repast was provided by Mr. Dawson, the landlord, to which ample justice was done. After the cloth was removed, Mr. Chambers, the chief clerk, was voted to the chair, whilst Mr. Crowcroft, the senior outdoor official, occupied the vice. The following toasts were enthusiastically drunk:—"The Queen," "Prince of Wales and Royal Family," "Postmaster-General and A. R. Forest, Esq." (the district surveyor), Mr. Clarke, the postmaster, whose absence through indisposition was greatly regretted

by all, "The Chairman and Vice-Chairman," and "The Host and Hostess." The proceedings were enlivened by songs, character-sketches, &c., by several members of the company. The event is the first of its kind since 1856, and the staff hope it may become an annual occurrence. The proceedings terminated at twelve, all regretting the shortness of the time they had been able to spend together, and it is hoped that, under the circumstances, on a future occasion, a point will be stretched in their favour, and an additional extension will be granted.

DUBLIN.

THE appearance of the TELEGRAPHIST was hailed here with great satisfaction, as it was felt a want had been supplied which only too long had been left unfilled. It was a curious thing that, though the first and principal effect of telegraphy is to bring peoples and nations into closer relationship, there has scarcely been any branch of science or business the members of which were so isolated from each other as the telegraph service. The paradox so baneful to their interest has been fast disappearing of late years, and it is hoped the TELEGRAPHIST will be the key-stone of that union which cannot fail in being of the greatest advantage to the service. It is no matter of surprise then that the TELEGRAPHIST was received here with a "Cead mille failthe."

APPROPOS of the foregoing, we received lately a very handsome Christmas Card from BM, which was universally admired for its beauty. Though a small matter in itself, it was unanimously voted here that BM had done the "right thing." It was followed later on by a New-Year's Greeting from Exeter, of a very neat and chaste design, and another from NT. No doubt the BM idea will be largely followed next season.

AFTER years of agitation the Dublin Stock Exchange has this month been put into direct communication with "SG." This is supplying a great want, and is certain to be appreciated by brokers in London and Dublin. The paucity of cross-Channel wires alone stood in the way of its being carried out long ago.

A SCIENCE CLASS has been formed here in connection with the Guilds of London Technological Examinations. Mr. Dowey is the teacher. His NT friends will be glad to learn he is fast making himself a general favourite with the Dublin staff.

SOME dissatisfaction is felt by the Dublin staff at being compelled to choose their leave out of the first nine months of the year, so as to have all over before the sixpenny rate comes into force. The sixpenny rate is all very well in its way, but it is felt that an intrusion has been made into the privileges of the staff by cutting off the choice of three months of the year, which include the Christmas season, too.

EDINBURGH.

PRESENTATION.—At a meeting held at the Ship Hotel on December 28, W. A. Gray, Chief Superintendent of the Telegraph Department, presiding, Mr. A. Eden was presented on behalf of the Edinburgh staff with a handsome gold Albert and locket, as a mark of esteem on the occasion of his transfer to London. A pleasant evening was spent.

GOLF CLUB.—The monthly medal competition took place on January 15, Mr. J. Johnston winning with a score of 84 less 20—64. The green was heavy.

ELECTRIC QUADRILLE ASSEMBLY.—The first *réunion* for the season was held on Friday, January 4, in the Literary Institute Hall. A most enjoyable evening was spent, dancing being kept up till four in the morning. This society is in a flourishing condition, and proves a welcome source of enjoyment to the young folks connected with the office.

GLASGOW.

POSTAL TELEGRAPH SHOOTING CLUB.—The presentation of prizes in connection with this recently-formed club took place on the 7th inst., in the presence of a large muster of members and their friends. The president of the club (Mr. S. A. James), in presenting the prizes to the successful competitors, dwelt on the satisfactory position the club had attained, and regarded the support which had been accorded by the Volunteers and ex-Volunteers of the department as auguring well for its success. The beautiful challenge cup and collection of handsome prizes which he saw on the table before him would, he said, do honour to any Volunteer Company in the kingdom. He thought the members had reason to congratulate themselves on the success that had attended their efforts to improve the quality of their shooting. He regretted that the annual match with the Edinburgh Shooting Club had resulted in a defeat by four points. Instead, however, of discouraging them, this ought rather to stimulate them to increased effort to retrieve their position when next they encounter Edinburgh in "mutual conflict." The prizes were then handed over to the winners, the first prize, which consisted of the challenge cup and a case of gold studs, being taken by Mr. T. McColl, who becomes the champion shot of the club for

one year. The other prize-takers were Mr. J. D. Collier, Mr. M. Murray, Mr. R. Brown, Mr. M. Cameron, Mr. A. Harper, and Mr. A. Kettles. An extra prize, subscribed for by the ladies of the department, was won by Mr. A. Kettles. The evening was afterwards pleasantly spent with song and sentiment.

On Christmas-day Mrs. Mansel, the worthy matron at Glasgow, as usual, invited the ladies of the 1st class to a social cup o' tea at her own house. As the other "sect" is rigorously excluded from this annual gathering, not excepting the TELEGRAPHIST's correspondent, the Telegraph world is denied the satisfaction of perusing a report of the proceedings. The gossips, however, say that this meeting, like that of former years, was a thoroughly enjoyable one.

HASTINGS.

A VERY pleasing affair came off at this office on Friday last, Jan. 11. Mr. Alf Carter, who is about to enter the "straits" of matrimony, was presented with a handsome marble time-piece, subscribed to by all the members of the staff. The presentation was made by Mr. Avar, chief clerk, who stated that during the time Mr. Carter had been at this office he had won the respect of his brother officers; and no better proof was needed than the very handsome testimonial before them, which he had the greatest pleasure in presenting. Mr. Carter, in reply, said that he found in doing his duty in a straightforward manner he had succeeded in gaining their respect, and he hoped that he should always merit it. He thanked them most sincerely for their kindness and good wishes.

HULL.

THE TELEGRAPHIST has been received with marked favour at this good old "Third Port" office as answering a want long felt. The two numbers already launched have been favourably criticised, the various articles and paragraphs being distinguished by literary merit of no mean order—and assistance of still greater excellence in the future history of the journal. The roll of subscribers here is large so far, with promises that will swell it out still more so, embracing almost the whole of the HU staff—confidence being felt that the enterprising journal will prove entertaining and instructive in its pages, and happily adapted to various minds and temperaments. The science student full of magnetism and electricity will find the TELEGRAPHIST his guide, philosopher, and friend in its popular and homely exposition of scientific truths; imparting information likely to be of great practical advantage in the career of the earnest and laudably ambitious telegraph clerks. Then, again, the purely literary student, whose mind is not peradventure altogether fashioned for the study of hard, dry science, will not turn away disappointed, for the brightly-written stories and recollections of "old stagers" in the service are well calculated to satisfy his love for reading during leisure hours. This applies with no less force to the ladies of the telegraph service who, it is thought, will become enthusiastic votaries at the shrine of the TELEGRAPHIST!

THE year just ended has been a veritable matrimonial one as regards our Hull office, one match having followed another in rapid succession—nay, in more than one instance it became a "neck and neck" in the race for the coveted matrimonial goal. Three of the ladies resigned to enter the happy state with best wishes of the staff. Miss Smith was fortunate enough to be the recipient of a handsome present, the gift of her office friends as a token of special appreciation. Several of the male staff have abandoned the isolation of bachelorhood, taking unto themselves winsome partners for life. No wonder, for has it not been said that "Woman enhances the joys and alleviates the sorrows of life?" The latest benedick recruit is Mr. Johnny MacAvoy, who managed to get settled congenially just before the old year passed away. Rumour and knowing whispering are agreed that "'84" will not be without its wedding events locally. More than one engagement is strictly *sub rosa*, waiting upon Time's due blossoming and fruition. Most interesting events in store, assuredly!

IN the work of true, unassuming Christian charity, the "HU" office is well to the foreground. Miss McKenzie (matron) has succeeded in collecting from members of the staff (including donation from the postmaster, Mr. Duesbury) the sum of three guineas, of which two have been given to the Childrens' Hospital, Storey-street, and one guinea to the childrens' ward of the General Infirmary. The ladies of the staff have generously undertaken to provide and maintain one cot for the childrens' ward for the present year.

ELECTRICAL ENGINEERING.—Wanted young gentlemen to qualify for the profession of Electrical Engineering at the WEST LONDON SCHOOLS OF TELEGRAPHY AND ELECTRICAL ENGINEERING, 101, Uxbridge-road, W. VACANCIES FOR APPRENTICES to learn the trade of Electrical Instrument Maker. Apply to the Principals.—[ADVT.]

OUR large office will undergo certain alterations in instrument tables, &c., anent the sixpenny rate and its expected development of traffic. It is hoped the service generally in pay and prospects will greatly benefit from the new departure.

LEEDS.

THE Leeds soiree will have become a thing of the past when this number is published. Full particulars in our next.

MISS RUSHWORTH, of the Market St. B.O. has resigned, and married a gentleman named Stamp. She had always a peculiarity for postal work.

MANCHESTER.

THE NEW POST OFFICE.—The principal portions of the new Post Office buildings are approaching completion, and ere long they will be occupied by the postal branch of the department. Regret has often been expressed that a better site was not obtained for a building so large and important, and some people are a little disappointed that the block does not extend to the main thoroughfare of Manchester—Market-street. The situation could not perhaps be better; it is in the very centre of the city. The building is a magnificent structure, and at some future date (with the Editor's permission) we will furnish a few details as to its style of architecture, its dimensions, and its numerous commodious offices.

THE ELECTRIC LIGHT.—Up to 8 p.m. the electric light (Edison's) is now used in "Four" room. It is found that the temperature of the room varies little, if any, during the time the light is in use, and apart from the benefit felt in the rooms above by there being less heat, the light is said to be an improvement on the gas.

DINING CLUB (Male Staff).—During the twenty-six weeks ending Jan. 5, 1884, 8,945 dinners were supplied, £264. 10s. 0d. being collected for the cost of them. Though there may be one or two little drawbacks in connection with it, we can assure the members that it compares most favourably in every respect with a larger club with which we were not long ago *privileged* to dine.

BURIAL SOCIETY.—The annual meeting of the "Manchester Postal and Telegraph Burial Society" was held on the 10th inst. The statement presented for the year ending Dec. 31, 1883, showed the number of members to be 147, with a balance in hand of £157 15s. 6d. The whole business, including the election of officers for the ensuing year, was gone through in a very hurried manner, and was not treated with that amount of consideration which the importance of the subject should receive.

ELECTRIC HARRIER CLUB.—The younger portion of the staff are forming a harrier club, J. Crosbie being their secretary. In the course of a few days, the captain (J. Evans) will arrange "a meet," and in the next issue we shall no doubt hear of an "exciting run." At the end of the season competition prizes are to be offered, towards which, it is hoped, the senior portion of the staff will subscribe.

CHRISTMAS AND NEW YEAR CARDS.—The strain this year on the Manchester Postal officials is said to have been greater than ever. Some officers were on duty for twenty-three successive hours. (Jolly Christmas that—eh?)

PREPARATIONS FOR THE SIXPENNY RATE.—The Engineering Department are busily engaged with the Warrington to Carlisle length of the new trunk line which is being erected from London to Glasgow.

THE news from South Africa, of the death of J. M. Brocklebank, which occurred on Nov. 30, at the early age of twenty-five, was received here with profound regret. Along with Messrs. Jones and Tasker he left Manchester in February, 1880, and was in a fair way to success. About five months ago he was sent, on account of ill-health, from Capetown to Prince Albert, where he remained until his death. He was interred at Prince Albert Cemetery, the funeral being attended by all the local public men, our young friend having apparently gained as many friends abroad as he left behind.

HARRY CHRISTIAN SIRRETT, age ten, son of Mr. Sirrett, was interred on the 9th inst. Much sympathy is felt for our respected Superintendent in his bereavement.

MR. P. J. SWEETNAM has been transferred to the Manchester office from Wolverhampton.

THERE are at present 745 officers appointed on the telegraphic establishment at Manchester (Central Office), over 100 youths and girls receiving instruction at the school, and about twenty persons, not appointed, regularly employed.

SIMON ARMSTRONG has been transferred to Manchester from Edinburgh.

MANCHESTER, LANCASHIRE, AND YORKSHIRE RAILWAY.

WE had a trial of the Holmes and Burke Primary Electric Light Battery on November 20, which consisted of eleven cells, working seven of Swan's incandescent lamps of about six-candle power

each. A first-class carriage on the 3.45 p.m. Manchester to Bradford train was lit up, and the same carriage returned to Manchester at 7.30 p.m. with the light apparently as good as at the start. For the information of scientific readers, I may say that the elements were carbon and zinc—the exciting liquid in the carbon cell being “Ozodone” (a coined word for a chemical liquid, the composition of which is a secret), and in the zinc cell dilute sulphuric acid. The E.M.F. was about 20 volts for the whole battery; internal resistance of same, 0.8 ohm; the average resistance of each lamp, 12 ohms; and consequently, the current through the circuit when the lamps were burning, 8 ampères. Dense and irritating fumes are given off from the battery, especially so when it is doing work.

The annual meeting of the L. and Y. Telegraph Departments' Literary Society was held on Nov. 16, Mr. Elleby, Assistant Superintendent, in the chair. The business before the meeting was the confirmation of the minutes of the last meeting, the appointment of manager and auditors, the admission of new members, and the balloting for completed volumes. The business set forth having been gone through, a vote of thanks was accorded to the chairman.

TELEGRAPH CLERK E. Swift, of Bolton, resident at Wigan, died on Dec. 4, after a painful illness of one month.

[This report was received too late for the January issue.—Ed. TEL.]

MIDDLESBROUGH.

THE promoters of this journal may be heartily congratulated by the large body of operators as having supplied the one thing most necessary for the further union of telegraphists. The TELEGRAPHIST has been well received here. Our local daily papers speak very highly of it.

RECENTLY the whole of our messengers, sixteen in number, were dismissed for divulging the contents of sporting messages entrusted to them for delivery. Several persons were prosecuted for bribing the boys, but only one was committed for trial at Northallerton, where a verdict of not guilty was returned. It is hoped this will be a warning to those through whose hands messages pass, also to the public, who will see that the servants of the department must not be tampered with.

DURING Christmas week the MI staff were greatly surprised about midday by a fine specimen of the “Barn” or “Screech” owl, starting in at one of the instrument-room windows. On the sash being lifted, it quietly hopped in and commenced an aerial tour round the room, much to the terror of our ladies, who did not exactly (h)owl, but certainly faint *screeches* were heard (this is not a barn-ey). Our visitor, after perching himself on the clock a few minutes, decided upon another resting-place, but failed to gain foothold, and fell to the floor, where it was captured alive, and admired by all for its beautiful plumage.

PREPARATIONS will shortly commence here to cope with the anticipated great increase of work on the advent of the sixpenny rate.

NORTHAMPTON.

SICK FUND.—We have had several applications for copies of our rules from different offices, and it may be interesting to those officers and others who intend establishing similar societies to inform them that Mr. Blackwood some time since kindly sanctioned the fines inflicted for late attendance being added to the Sick Fund. This is proving an additional source of income to the fund. We may also state that we shall be glad to furnish offices with copies of the rules on receipt of a stamped envelope. Further, we may mention that the fund is flourishing, and at the present time we have a clean bill of health and a nice balance in the savings bank.

NORWICH.

THE telegraph staff of the above city held their annual dinner at the Norfolk Hotel, Norwich, on January 9. There were present in addition, brother telegraphists from Ipswich, Yarmouth, and Lowestoft. The chair was occupied by Mr. Ayers, superintendent, and the vice-chair by Mr. Isley. After the loyal toasts from the chair, the health of the Postmaster-General was proposed by the vice-chair, and was cordially responded to. The toast of the Postmaster of Norwich was proposed by Mr. Moore, who spoke in high terms of Mr. Winch's desire to do all he possibly could for the welfare of the staff, and the general courtesy received from him. Musical honours were accorded, and Mr. Isley responded in suitable terms on behalf of the postmaster. Mr. Crotch then proposed the “Telegraph Service”; and in doing so, referred to the past and future of telegraphy. This was responded to by Mr. Isley on behalf of the telegraph staff, and by Mr. Power (who was heartily received) for the engineering staff. The next toast—that of “The Visitors”—was proposed by Mr. Robinson, who expressed the great pleasure the Norwich staff felt in having so many of their friends from a distance. Mr. Walford responded for Ipswich, Mr. Coupe for Yarmouth, and Mr. Bussey for Lowestoft, each in turn expressing

the hope that these meetings might be of more frequent occurrence, as they tended to foster a general feeling of brotherly interest. The toasts of “The Chairman,” “Our Postal Colleagues,” “The Vice-Chairman,” and “The Ladies” followed, the former being received with marked appreciation. Songs were freely interspersed by Messrs. Ayers, Isley, Crotch, Moore, Baldry, Gostling, Bussey, and others, and a most delightful evening was spent.

PORTSMOUTH.

It must be pleasing to receive from all sides such gratifying evidence of the success attending the first issues of the TELEGRAPHIST, and I should be neglecting a duty as its representative were I to omit the fact that its first numbers have also created a very favourable impression in this district. A hope has been expressed by some that the “Electron” papers may be illustrated by plain and explicit diagrams, and no doubt this would give universal satisfaction. Others express a desire that advertisements may be kept to the cover, in order that they may be slipped for binding. No doubt these and other expressions of opinion will receive due consideration at the hands of the Editor. The bi-monthly proposal does not receive favourable support at this office, but it is thought that an enlarged monthly publication would be more to the purpose.

THERE is very little to report beyond the fact that “business is dull.” Portsmouth is one of those towns which have their busy and dull “season,” the work during this month and February being little more than half that dealt with in July and August. We have been at considerable disadvantage hitherto from the peculiarity of the arrangements existing in this town, or rather towns, for there are four—Portsmouth, Portsea, Landport, Southsea. At present the Head Telegraph Office is at Portsea, Head Post-Office at Portsmouth, Head Sorting-Office, from which the news for two daily newspapers is delivered, at Landport, and Southsea is the visitors' quarter. It is now contemplated, in view of the sixpenny rate, and with the idea of centralising the work, to provide additional accommodation at Landport for a new Head Telegraph Office; the instrument room to be about 50 feet by 30 feet. This will be much welcomed by the at present somewhat scattered staff, and will, doubtless, enable us to meet whatever increase may arise from the reduction of tariff with much greater ease.

SHEFFIELD.

CONSIDERABLE amusement has been caused lately in a village not a hundred miles from SF, by the successful perpetration of a hoax on one of the local tradesmen. A gentlemanly-looking person went one day to the place of business of the victim, and professing to have authority from the department in London, asked for an estimate or tender for the painting, with *white* paint, to a height of eight feet, of a large number of the telegraph poles in the surrounding district. Particular instructions were given that the quality of the paint should be very good, and “one that would stand well.” The estimate was given and accepted by the “inspector,” who promised that immediately on the completion of the work the tradesman's account should be paid. Paying a visit to a neighbouring farm-house, our “inspector” asked for lodgings, and was promptly told that he could not be accommodated. Putting on a most authoritative air, he said he *must* be taken in, and added that he must be given the best of everything too, as he was quite willing to pay for all he had. Addressing the farmer, he said: “It is a lucky thing for you that you only said you *could* not give me accommodation, for had you said you *would* not, you would have been liable to a penalty of £50.” Awed by this mention of the law the farmer apologised, and the “inspector” took up his lodgings and lived in sumptuous style. The painter hurried on with his work, and was very careful not to exceed the regulation height of eight feet, and frequent visits were paid by the Inspector to see how the work was being done. The job was nearly complete, when the Inspector suddenly disappeared. Alarmed for the safety of his money, the painter wrote to London, and was quickly informed that no authority had been given for the painting of the poles, and that he had laid himself open to divers pains and penalties for interfering with the property of the Postmaster-General. We need not add that the Inspector has not since been heard of, and that his present address is most anxiously required by two sorrowing men in the village of E—.

We regret to have to announce the death, at the age of eighty-two, of Miss Ellen Wrecks, for many years postmistress of Sheffield. The deceased lady retired on a pension some years ago, and was succeeded by T. Mawson, Esq., our present postmaster.

SOUTHAMPTON.

THE Volunteers and Royal Engineers connected with the Postal Telegraph Department sat down to a very enjoyable supper at the “Brewery Bar,” East-street, on Monday, the 7th inst. The usual

toasts were given and duly responded to. Some good songs were capitally rendered by Privates T. Dunning, G. B. Messer, and W. Simmonds; Corporals W. Evans and J. Waite; Sappers Adams, Rowe, Rayment, Felstead, and others. Mr. Cantello presided at the piano, which materially conducted to the success of the evening. The TELEGRAPHIST is meeting with great favour at this office.

SWANSEA.

We are pleased to state that the number of subscribers have now increased to 21, and there is a prospect of a still further increase. This fact may be accepted as a tolerably good proof that the TELEGRAPHIST is growing in great favour. Several well-designed New Year's cards have reached the staff of this office from some of the large centres, viz., Newcastle, Birmingham, Exeter, Plymouth, &c. We take this opportunity of publicly reciprocating the greetings contained therein, and also to wish the Editor a prosperous New Year.

WATERFORD.

THE Waterford Staff has been deprived of an old and much-esteemed member by the transfer of Mr. Somers to the engineering branch at Cork, which took place on the 4th ult. Before leaving, he was presented with an address and testimonial, in which every member of the telegraph and postal staffs joined. After the presentation, Mr. Somers invited all present to Kennedy's Hotel, where a splendid supper awaited them, and where—as often in the time of our glorious agitation, which those who have gone from us will, no doubt, remember with a pleasing recollection—a thoroughly enjoyable evening was spent, enlivened by beauty, music, song, and wine.

WORCESTER.

THE annual supper of the Worcester Postal and Telegraph clerks took place at the Bell Hotel on Dec. 27, when about fifty sat down to an excellent repast. The Mayor (Mr. W. B. Williamson) occupied the chair, and was supported by Mr. A. E. J. McIntyre, Q.C., M.P., one of the city members. The toast list was interspersed with many good songs, to which the Mayor contributed by singing "Jack's Yarn." Amongst the toasts, that of "The Queen and the Royal Family," and also of "The Postmaster-General," were drunk with musical honours. A most enjoyable evening was spent, which was mainly due to the energy of our worthy secretary, Mr. F. J. Price.

YORK.

It is with the deepest regret that we announce the death, at the age of 43, of Mr. William Oates, the respected superintendent at this office, which occurred on Sunday, Jan. 6. Mr. Oates had been unwell for some time past, but it was confidently hoped that he would soon regain his usual health—a hope which was fated never to be realised, as rapid consumption set in, with the result as stated. The deceased entered the service of the Electric and International Telegraph Company in 1854, and, after filling the post of assistant superintendent at Newcastle-on-Tyne, was transferred to York, where he held the position of superintendent during the fourteen years prior to his death.

Colonial Items.

INDIA.

BOMBAY, December 21, 1883.—To the Editor of THE TELEGRAPHIST.—Prospectuses received, many thanks.—The TELEGRAPHIST will supply a want greatly felt in India. Kindly send out a few specimen copies for distribution. I have made known out here the appearance of a journal devoted to our body, and I shall be glad to do all I can to increase circulation. Shall send you contributions from time to time.—THE BOMBAY CORRESPONDENT OF "THE TELEGRAPHIST."

Foreign Items.

AMERICA.

ON December 24th, the staff of the American Telegraph & Cable Company, or Western Union Telegraph Co., presented their Superintendent, Mr. H. E. Robson, with a splendid meerschaum pipe, as a mark of their esteem and regard. Mr. Robson commenced his telegraphic career with the United Kingdom Company, at Newcastle-on-Tyne, in 1866, being transferred to the Government service in 1870. He left the latter to join the Direct Cable

Company, at Chester, in January, 1876, and the following year was changed to London in the same service, where he stayed till January, 1880, when he joined the Compagnie Française du Télégraphie de Paris à New York (P. Q. Co.). In July of the same year he was transferred to New York, and shortly after his arrival there he was appointed Superintendent. When Mr. Jay Gould laid the American cables, now leased by the Western Union Company, Mr. Robson was appointed Superintendent of the London office, and he returned to England in August, 1881. Before leaving New York he was banquetted by the operators connected with the American Union Telegraph Company, and the P. Q. Company, and presented with a handsome diamond ring by the latter, so that he appears to be popular on both sides of the Atlantic.

Cable Companies.

SPANISH NATIONAL TELEGRAPH CO.—Messrs. Pilfold & Hurdiss, from Valencia, are with this company at Santa Cruz, Teneriffe, Canary Island; Mr. Wilson, from Ballinskelligs, is at Cadiz; and Mr. Bechervaise, from Ballinskelligs, is superintendent at Las Palmas Gran Canaria.

DURING the recent interruption of the Brazilian Submarine Company's St. Vincent-Pernambuco cable, a message from London to Rio de Janeiro passed through twenty-seven cables and four land lines, the total distance being 13,240 miles; and during their transmission the messages were handled by eight companies.

ATLANTIC CABLE STATIONS (BRITISH SIDE).—A short account of a visit to the cable stations at Valentia and Ballinskelligs may be interesting to the readers of the TELEGRAPHIST, as the sixty clerks composing the staffs at those stations are selected from the principal postal telegraph offices in England, Scotland, and Ireland. Valentia is 45 and Ballinskelligs 55 miles from the nearest railway station (Killarney). The Anglo station is built on the island of Valentia, near the village of Knightstown, and is rather an extensive place, there being one large house for the offices and single men's quarters, and a terrace of about fifteen houses for the gentlemen who are married. The buildings are close to the narrow channel which separates Valentia from the mainland. The cables are landed on the western side, and brought across the island in trenches. The Ballinskelligs station is completely isolated, being about twelve miles from the nearest town (Cahiriveen), but its situation is splendid, being built on the shores of a beautiful sandy bay on the west side of Ballinskelligs Bay, within fifty yards of high-water-mark, and the huge rollers from the Atlantic often dash their spray over the boundary walls. At this station there is also one large house, containing the offices and single men's quarters, and a separate house for each of the married men. There are cricket and football clubs at both stations, and the two staffs often play friendly matches. The companies look well after their employees, as both stations have full-sized billiard-tables, libraries, and various other amusements. On the whole, a telegraph clerk's life at those out-of-the-way places is rather an enjoyable one, and certainly, in the summer-time, a most enviable one.

Correspondence.

NOTICE TO CORRESPONDENTS.

The Editor declines to publish any letters containing abuse or personalities. The name and address of the writer must be enclosed, not for the purpose of publication, but as a guarantee of good faith.

Correspondence invited from English and Colonial Telegraph Clerks. Contributions for the March number must reach the Editor before February 15.

To the Editor of the TELEGRAPHIST.

"TS" DISCIPLINE.

SIR,—Are you aware that the individual who, in your last issue, signed himself "A. C.C.," was not, as anyone by this signature would be led to suppose, a "Clerk-in-Charge," but I have good grounds for stating the letters "C.C." are intended nominally to represent a "Check-Clerk," but practically to wilfully mislead your readers. I think, moreover, that the "Powers that be" will not thank him

for this attempt to "ape" their prerogative, by issuing his statements under the seal of a "spurious authority."—I am, sir, your obedient servant,
Hy. T. W.

SIR,—I cannot see any remarks made in the first issue of the TELEGRAPHIST which call forth the item—viz., "Discipline in TS." (by a "C.C."). Such remarks as that item contains, made by superior officers, will soon bring about a great amount of ill-feeling between superior officers and "insignificant subordinates," as we are called.
A JUNIOR SUBORDINATE.

SIR,—Will you kindly find space for me to make a protest against the remarks made by "A C.C." in last month's TELEGRAPHIST, that the discipline in TS tends to foster a manly and independent spirit. My observations convince me that just the reverse to this is brought about, and that the indiscriminate way in which the clerks are treated has spoilt the staff, inasmuch as if a man is not made excessively nervous by his endeavour to avoid reports, it creates in the rest a feeling of exasperation and dissatisfaction.

Half the reports circulated in this great beehive are really frivolous. One is told on paper to explain "the cause of his amusement"; another, "why a slip—a punched one—is in his basket unpugged"; and another is supposed to have his eyes in half-a-dozen places at once, and has to explain "why his perforator failed," and others of quite a silly nature *ad lib.*, until, Mr. Editor, you see, after all, the officialism is near the verge of tyranny. A move, however, has been made in the right direction, for that most humiliating of punishments, the imposition of extra duty, has been withdrawn in the case of wrong numbers; this, no doubt, being through the clerks themselves being cognizant of the fact that such imposition is illegal, and that actually all the extra duty performed could be claimed as overtime.

Perhaps by-and-bye our supervisors will see that, to make a clerk take an interest in his work and be of use to the department, he ought to be approached with the understanding that we have feelings; that a clerk expects to be treated civilly and fairly, and that if occasionally, two or three times a year, an error is made, this should not constitute him being called a careless telegraphist, to be punished accordingly. Our work is a bit mechanical, but we are not automata.

It is most surprising that more errors are not made, considering the amount of work got off. In the case of news, all errors—at least, a great percentage of them—may be attributed to badly-written manuscript, as very few repetitions are required in printed matter. A clerk should not be punished for this. Instead of indulging in recrimination, a better spirit would manifest itself if our assistant supervisors showed the staff they were trying to make things pleasant for them. A mutual understanding, as should exist, would soon spring up then.—Your obedient servant,
Jan. 4, 1884.

ONE OF THE BEES.

SIR,—It is with great surprise that I, and I believe the majority of clerks at the Central Station, witnessed the publication in your last issue of the letter purporting to emanate from a "C.C." I positively assert that it is within the power of supervisors to materially injure an "insignificant subordinate," as is proved daily in our office. In fact, I myself have been the victim of this "school-master-like officialism."

Your correspondent remarks that "explanations can only be demanded on paper." Quite true, and, were it but the one case, it would be a mere trifle; but explanation after explanation is required for some trivial offence, sometimes one and two per day, so that in the course of a week or so, numbers make the case assume grave proportions, consequent on the several repetitions of these (very often unavoidable) so-called irregularities. The punishment in the first case is probably a "caution"; and the same, perhaps, for the next two or three; but here, for the next, the C.C. submits "that Mr. — be punished with two hours' extra duty, without pay; as he has been several times previously cautioned for like offences." So it can be easily understood, the manner in which the way is paved before proceeding to fully vent their animosity upon the unfortunate head of the "insignificant subordinate" is a very easy matter.

These cases, of course, are shown to the sub-controllers in their worst light, and often exaggerated. A doubt as to the truthfulness of the C.C.'s endorsement could not be entertained, whether or not denied by the "subordinate," and the extra duty is "approved, with a caution that future cases of this kind will be seriously dealt with."

Hoping that your correspondent will see the error of his "contemptible and maudlin notions" regarding the manly and independent tone of discipline fostered in TS, and also wishing your valuable and instructive journal every success,—I remain, sir, obediently yours,
SKARP.

SIR,—I am surprised that such a letter as that of your correspondent "A C.C.'s" should have originated at TS. I should have thought that a telegraphist there would have been ashamed to ventilate such a "shallow" amount of knowledge (as he seems to possess) of its "discipline."

Of course, he knows that supervisors can injure their subordinates if they would so choose, and that half the explanations demanded do not reach the superintendents, still less the Controller. This is plain—that these demands are not worthy of higher notice, and are simply obtained to satisfy their own or some antiquated individual's whims who bears some animosity against his fellow clerks.

He also states that they cannot award punishments, or decide whether an error has occurred. He forgets that "divisional supervisors" do recommend extra duty, and it is simply endorsed by higher authorities, but very seldom revised; and who is it that judge errors, &c., but your own supervisor? Would it not be the height of absurdity to ask any other than those in the instrument-room where that error was committed for an opinion as to the guilty person. On the other hand, his version would be that the Controller, or some high personage, would know whether the error was caused by failure of the wire or carelessness of the clerk. This is out of all reason, and is known to be quite contrary by the staff, &c.—Yours obediently,
KRITIC.

A Division, C.T.O., Jan. 3, 1884.

AN EXPLANATION.

SIR,—In your TELEGRAPHIST for January, I notice a statement that Mr. Fusedale went to the West Indies on account of "refusing extra duty." This I most respectfully beg to deny. He certainly did refuse the punishment, and resigned through it; but after the elapse of a week, the Post-office authorities wrote, asking him to continue his duties. He did so, and shortly after *resigned again*, not in consequence of the extra duty, but to better himself.

I should like also to state that it had been his intention for some time previous to join a foreign service. I do not think, therefore, that the cause of his going abroad should be as stated in your article. Hoping, Sir, that you will find space for this letter to show my fellow clerks the *real cause*, and not be under the impression that it was through the extra duty,—I remain, sir, your obedient servant,
W. H.

D. Division, C.T.O., Jan. 3, 1884.

THE SIXPENNY RATE.

SIR,—A great boon would be granted to the public with the least disadvantage to the department if the new tariff was two words for a halfpenny, including the address from, the minimum charge per m. being sixpence. This would be easy to reckon, and easily comprehended by the least intelligent of the public. The press tariff might be made 100 words per ls. day and night, excepting from 11 a.m. to 2 p.m., during which period the present rate might be retained.

It is to be hoped that arrangements on a par with the absurdly excessive ones of the Parcels Post will not be deemed essential ere its advent. No number of additional officers will make up for efficiency, and it is with efficiency the department should first deal. The instrument examination for establishment should be made more stringent, the standard being raised five words per min. for each inst., and should be made so at once. There are large numbers of clerks in the department, appointed during the last six years or so, who, to borrow a phrase of Mr. Disraeli, "are like flies in amber—one wonders how the devil they got there."

A premium of ten shillings and a certificate might with advantage be given to clerks at sub-offices who read twenty-five words per minute—the examination to be conducted at their head office, and the premium presented three months after the examination, if the clerk be still engaged at a P.O.

Established officers might be called upon to work one hour's overtime per day, and then, if still further additional assistance be required, by an increase of staff. If the overtime was declined by some, theirs would be eagerly accepted by others, in addition to their own, whose exigencies make sacrifice of recreation and leisure imperative.

In addition to these, we hope the telegraphist will be speedily unamalgamated, and the deterioration in the manipulation which

CAUTION TO LADIES AND GENTLEMEN who think of entering the Telegraph Service. Never pay for instruction in Telegraphy before you have inspected the system and seen the instruments you will have to work. Beware of clap-trap advertisements emanating from Amateurs. The WEST LONDON SCHOOLS OF TELEGRAPHY, 101, Uxbridge-road, W., are always open to the inspection of the public, and pupils are received on trial.—[ADVT.]

has set in through the "Jack-of-all-work system" arrested, and the old pride resuscitated.—Yours faithfully,
SENEX.

SIR,—As the 1st of October, with that gigantic stride which telegraphy is about to take—"the sixpenny rate"—will soon be at hand, I wish to draw the attention of the junior staff in the telegraph department of the United Kingdom to the inadequate manner which we are at present paid. The late scheme only benefited the first and a few at the top of the second class, and left the backbone of the service wholly unprovided for as regards remuneration. I think that this is a very opportune time for the junior staff to forward their grievances in a general petition, embodying something to the effect that a clerk of five years' service should receive 28s., six years' 30s., seven years' 33s., eight years' 35s., nine years' 38s., and so on. I suggest that a petition be drawn up and signed by a junior delegate (when I say junior, I mean clerks of five to six years' service) in every large office in the United Kingdom, and be forwarded to the Postmaster-General for his earliest consideration.

The majority of the instrument clerks are young men, who suffer greatly at present from the smallness of their salary. Many of the clerks in our office varying from 19 to 23 years of age are receiving the paltry salaries of 19s. and 22s. per week. Is this not simply disgraceful, whilst female clerks, with about five years' service, are receiving 28s. per week, without performing night or Sunday duty? No doubt we shall be having a large addition to our staff, but still, they will not be able to work with any rapidity for at least two years, and it will fall to the lot of us poor mortals—the juniors—to work the busiest of circuits for the meagre wage I have mentioned. If we mean to do anything, "now" is the time, and let us adhere to the old proverb, "Union is Strength," and no doubt we shall soon be able to command a larger salary. Hoping that your paper will be prosperous, I am
AN NT JUNIOR.

INCENTIVE TO TECHNICAL STUDY.

SIR,—“An Old Company's Man” draws attention to the absence of any incentive for telegraphists to devote their energies to technical study, and no doubt this is, as he states, the primary cause of so much indifference being exhibited by the majority of the manipulative staff in a scientific direction.

It would be to the advantage of the service if some inducement could be offered to those who are willing to educate themselves, or to be educated, in this higher branch of our profession. Could not an association or scientific society be formed by our leading electricians, having the power of electing fellows or associates from those who were capable of passing a certain examination? There could be membership—say of 5s. a year—entitling subscribers to copies of their journals or papers, whilst a fellow or associate, by examination, should be allowed to affix F.S.E., Fellow of the Society of Electricians, to his name. Little difficulty would be experienced, I imagine, in forming such a society, and it certainly would offer an inducement, in the absence of any other, to those whose inclinations lead them to become more than mere machines in the hands of science. Possibly the Society of Telegraph Engineers already existing could be asked to initiate some such movement.—I am, sir, yours very truly,
F. E. B.

UNJUST TREATMENT OF PROBATIONERS.

SIR,—In the editorial notes of your first issue, there is some mention of bad treatment by TS of probationers. May I be allowed to state that out-stations, beside TS, are also guilty, and in some cases have more than unkindness to answer for?

Some year or so ago, I used to take charge of a provincial circuit (Sounder), and worked very well with all the clerks at that station, except one, and that one was the "Clerk-in-charge." This person, whenever he knew I was at the circuit, would send a "service message," *via* another station, complaining of my working; he would also send reports to TS, in many of which were deliberate falsehoods. This could not go on very long, and the outcome of it was that I had my increment stopped, and was removed to other circuits, where there has not been a single complaint made against me.

I very much fear that mine is not an isolated case, and that others have suffered through those clerks that take a pleasure in fully exercising the powers they have to report, and in those reports not confining themselves strictly to the truth.

I should like them to know that, besides our food, we have a position to obtain and a good reputation to keep up; and it is difficult to do either when we have such impediments in our way as falsehoods, which we can contradict, but owing to the peculiar circumstances in which we are placed, we cannot prove to be untrue.

In most cases it is a mistaken idea that TS will not work with probationers; I am sure that if the person at the other end of the wire were to ask us to send steadier and to receive patiently, we should only be too pleased to oblige; but it is a well-known fact that there are numerous clerks who delight in working obstructively—that is, work very slowly, and if you try to reason with them, say, "Don't talk," &c., and those clerks are mostly to be found in sub-offices and out-stations, and having the charge of a small office, fancy themselves persons of great importance.—Yours truly,
C. A. S.

A LADY'S TESTIMONY.

DEAR MR. EDITOR,—I cannot tell you how interested I have been in your "new journal" for "telegraphists." I think it is charming.

I read every bit of it, and did not find it *dry* and *stiff*, as some journals are. I am looking forward anxiously for the next. Thank you for sending it so quickly after receipt of stamps. It is a very dull little town where I am living. After business hours I long for enjoyment; but there are no theatres, and very seldom any entertainments, so I leave you to imagine how dull it is. I like the work of the Post Office very much, and telegraphy, I think, is perfectly delightful.

Hoping, dear Mr. Editor, that you will not think it rude of me in addressing you thus, wishing your journal every success, and you the compliments of the season, I remain, yours very truly,
A. M. C.

[It is well we are married and a long way off.—ED. TEL.]

Answers to Correspondents.

ONE OF THE STAFF (D Division, TS).—Jealousy, no doubt, prompted you to write that impertinent letter. The lady in question wrote to us, and signed her name. She did not resort to vulgar, anonymous letter-writing. If she is wise, she will select a better advocate than a person who hasn't the courage to sign her invectives. When may we expect to hear from your solicitors? You say you are a Government officer, and not a public character. No one ever dreamt of you in the latter capacity!

MISS L.—You may rest assured that your friends will never again have occasion to complain. In the language of the immortal bard—"The rest is silence."

G. M. (Onsney).—We haven't enough space as it is. Where should we be if we printed articles in Morse language?

ACTIVE.—Talking on the wire is now considered a serious offence. We sympathise with you, but shall we bring down Jove's thunderbolts upon your devoted head by publishing your "XP" complaint? No! Perish the thought, and pass on the letter to the W.P.B.

A WOULD-BE POLITICIAN.—A few lessons in English grammar might improve your style. We do not interfere with politics or religion. Shall we send your elegant epistle to Sir Charles Dilke? No doubt the President of the Local Board will stop visiting the back slums in deference to your wishes. If Sir Charles knew your name and address he might call upon you for further orders.

CLAPHAM JUNCTION.—The information was sent from another source. The extract from *Scraps* is too old for us.

THE GRIZZLY ONE.—Your funny sketch crowded out, but it shall appear later on. We didn't get much money in the early days of telegraphy, but we had lots of fun.

TO THE POETICAL TELEGRAPHIST.—For heaven's sake spare us. We haven't got a paper-mill, and our servants can't be lighting fires all day long. Tune your lyre to the note of the Morse-key, and then we shall be glad to hear from you.

A. M. C.—We publish your letter just to give the Metropolitan ladies an idea how THE TELEGRAPHIST is appreciated in the Provinces.

F. B. W.—If you think the Editor of THE TELEGRAPHIST will ever descend to the level of a wretched sycophant and flatterer, you are mistaken. All criticism will be fair and honest. If a man appears in public and courts publicity, he must stand his chance just the same as a regular professional. If you want all butter, look elsewhere, for you will never find it in our columns.

THE system of training pupils at the WEST LONDON SCHOOLS OF TELEGRAPHY is based on the Government plan. Learners are not only taught to manipulate the Sounder, Printer, and Needle Instruments; they are thoroughly initiated in the duties of a Telegraph Office. The nervousness consequent on taking charge of a circuit is reduced to a minimum by the perfect system of training at these Schools. Send for a Prospectus to the PRINCIPALS, 101, Uxbridge-road, London, W.—[ADVT.]

In Preparation, and will shortly be published, a new work entitled

THE PRACTICAL TELEGRAPHIST, AND GUIDE TO THE TELEGRAPH SERVICE.

By WILLIAM LYND, Editor of "The Telegraphist."

"THE PRACTICAL TELEGRAPHIST"

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*"The Practical Telegraphist" will be divided into three parts
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PART I. will contain a comprehensive Guide to the Telegraph Service, and all the necessary information sought after by the hundreds of young ladies and gentlemen who present themselves at intervals before the Civil Service Commissioners to enter for the Competitive Examinations; also

VALUABLE INFORMATION FOR THE PUBLIC

Never before procurable in a portable form. In the pages of Part I. of **THE PRACTICAL TELEGRAPHIST** the man of business who is constantly using the wires of the Postal and Foreign Telegraph Services will find all the information necessary to enable him to go direct to the nearest Telegraph Office and send his message to any part of the world, and to fix the charge himself without a moment's notice.

PART II. will be the skilled Telegraphist's *vade mecum*, or, in other words, technical instruction written in popular language which will enable him to understand the instruments in his charge, and to localise a fault and remedy it (when possible) without giving unnecessary trouble to the Engineering Department. The construction and chemical action of the batteries now in use will receive careful attention, but no obsolete forms or useless modifications made to sell will be noticed. The information and instruction contained in this section of "THE PRACTICAL TELEGRAPHIST" will not be beyond the ken of our lady clerks, many of whom long for a little scientific knowledge in a palatable form. Space will be devoted to interesting items relating to Telegraphy, such as the lengths of the various cables in different parts of the world, the apparatus used in foreign countries, and a mass of reliable data valuable alike to the Telegraphist and the General Public.

PART III. will be something new to the Telegraphic world, and the nucleus of a separate volume in the future. This part of "THE PRACTICAL TELEGRAPHIST" will be entitled

THE TELEGRAPHIST'S DIRECTORY FOR 1884.

The Name and Address or Office of any Telegraphist will be inserted in the Directory section of "THE PRACTICAL TELEGRAPHIST" for Sixpence, thus—

ROBINSON, J., Postal Telegraphs, Hull.
NAYLOR, H., Eastern Telegraph Co., Cairo.
BROWN, G., L. & N.-W. R. Telegraph Dept., Crewe.

Or, Two lines for One Shilling, thus—

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Price 2s.; 2s. 6d. Boards, post-free.

IMPORTANT NOTICE.—Names for the Directory must reach the Editor of the TELEGRAPHIST not later than February 15th,—the earlier the better. Superintendents and Supervisors are particularly requested to state their rank when sending in their names for the Directory. All copies ordered before the end of February will be delivered immediately they leave the binders' hands.

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The Telegraphist

A MONTHLY JOURNAL FOR

Postal, Telephone, Cable, and Railway Telegraph Clerks.

LONDON: SATURDAY, MARCH 1, 1884.

The Contest of British Telegraphists.

THE first telegraphic competition is now a thing of the past, and the name of the champion Morse transmitter will soon be known wherever the English language is spoken. Friday and Saturday, Feb. 15 and 16, 1884, were red-letter days in the history of telegraphy. The importance of the event cannot be over-estimated. Such a contest as the one which took place at the West London Schools of Telegraphy and Electrical Engineering deserves to rank high in the estimation of the Government, the scientific world, and the general public. In the first place, the Department must benefit by the stimulus it has given to the staff, for ever since the announcement of the competition, telegraphists have been getting up their speed and improving the quality of their manipulation. Electricians and telegraph engineers cannot fail to be pleased to note improvements in the working of the beautiful contrivances placed in the charge of the telegraphic clerk; but the public, most of all, have reason to feel an interest in the event we are recording, for it stands to reason that the fastest and best manipulators cause the least delay and make the fewest mistakes. It is a marvel that a telegraphic competition was not suggested years ago. In the old Company's days what a commotion it would have caused! There would have been representatives from the Electric, U. K., and Magnetic, and the battle between the Companies would have been watched with universal interest. Now that the telegraphs belong to the State, and rival inland Companies no longer exist, it is a question of the best man in the service; and although the spirit of rivalry may not be so keen as in bygone days, the contest of 1884 has acted like a powerful lever, and raised to the very highest tension a feeling of emulation amongst the great body of British telegraphists. We have said that it is a marvel that a similar event was not proposed years ago; but we cannot say we are sorry, because it has been left for the proprietors of this journal to establish an institution both useful and interesting. At first many telegraphists doubted the genuineness of our offer, and it was only after the appearance of the silver cup in the window of Messrs. H. & E. J. Dale's Ludgate-hill establishment that the staff began to think seriously of the matter. The following is a correct list of the competitors who entered their names for the contest:—

CENTRAL TELEGRAPH OFFICE.

Atkins, C. W.
Benskin, F. W.
Brookes, F. A.
Burgoyne, A.
Brooker, A.
Bray, F. A.
Cobb, W. T.
Coggan, E. A.
Davies, Miss Emily.
Daly, T.
Dennett, J.
Edmonds, Miss.
Ferneyhough, Mr.
Good, A. T.

Gough, W.
Moore, Miss A.
McEwan, A.
McPherson, J.
Owen, W.
Percival, F.
Reed, H. G.
Spalding, A.
Searle, C. A.
Sinclair, W. M.
Smith, J. D.
Walker, A.
Wilde, E. J.

GREAT WESTERN RAILWAY, PADDINGTON.
Brown, W. G. | Mathias, J. R.
STOCK EXCHANGE, LONDON.
Chapman, J. | Smith, F. W. N.
Crudge, A. | Woodley, C.

ANGLO-AMERICAN CABLE COMPANY.
Davis, P. F.

DIRECT UNITED STATES CABLE COMPANY.
Dicketts, J. E.

FLEET-STREET (*Northern Echo*).
North, A.

SUB-OFFICES.
Muncey, R. A., P.O. Uxbridge-road, W.
Wood, T., 191, Oxford-street, W.

PROVINCIAL OFFICES.
Glasgow, Mr. J. Fergus.
Leeds, Mr. J. Jackson.
Swansea, Mr. W. Howells.
Sheffield, Mr. C. A. Butler.
Wolverhampton, Mr. J. W. Bunday.

COMPETITORS WHO DID NOT APPEAR.
Mr. F. Percival, Central Telegraph Office.
Mr. J. Jackson, Leeds.

WHAT THE HEADS OF THE DEPARTMENT DID FOR THE CONTEST.

The prize being offered for quality as well as speed, it was evident that an ordinary Morse printer would not do for the judges. A Wheatstone receiver was absolutely necessary, in order to have the marks large enough to test their accuracy. The Wheatstone instruments are only used at the Central and the offices of the large towns; therefore we petitioned the Engineering Department of the G.P.O. for the loan of the apparatus. Our application was most cordially received, and a Wheatstone receiver and two of the very best keys (single and double current) were sent to the West London Telegraph Schools, to be used at the competition. Nor was that all the Department did for us. At the request of Mr. W. H. Preece, Mr. A. Graves superintended the fixing of the instruments, and gave his services on the first night of the contest.

THE JUDGES.

The two judges elected by the Committee of Competitors were Mr. W. Webb and Mr. W. Miell, both of the Central Telegraph Office. The result of the contest has proved how well these gentlemen did their duty.

The starter was Mr. C. Fulton, late of Edinburgh.

THE CONTROLLER.

Mr. H. O. Fischer, the respected Controller, who has from the first encouraged and stimulated us with his sympathy, added considerably to the success of the competition. When it was suggested that the decision of the judges might be questioned by some of the defeated, Mr. Fischer appointed Mr. W. T. Douglas, one of his superintendents, as umpire. It gives us great pleasure to have occasion to endorse all that the Controller said about Mr. Douglas before the contest, for that gentleman proved himself thoroughly competent to fulfil the unpleasant task he was called upon to perform.

THE PRIZES.

A Silver Cup, supplied by Mr. B. W. Fase, silversmith, 50, Oxford-street, W., presented to the quickest and best transmitter on the Morse Key by the proprietors of the

TELEGRAPHIST; also a third of the entrance-money to the second and third best senders.

THE RULES OBSERVED.

4. Each competitor was allowed three rubs out.
2. Six badly-formed letters, or four rubs out, entailed disqualification.
3. Competitors were allowed to use either a double or a single current key.

The chronograph for timing the competitors was kindly lent by Mr. B. W. Fase, 50, Oxford-street, W.

THE FIRST NIGHT.

At eight o'clock on Friday, February 15, the spacious instrument-rooms of the West London Schools of Telegraphy and Electrical Engineering, 101, Uxbridge-road, W., presented a very animated appearance.

The Commercial Room was set apart for the judges and visitors, and on the centre table was fixed the instrument which was to faithfully record the "sending" of the competitors.

The Engineering Room had undergone a complete transformation. The lathe was still, and banished to a remote corner. The Wheatstone Bridge belied its boasted functions, and did not offer a single ohm's resistance as we pushed it out of sight. In clearing the room, the engineering pupils did not show a *spark* of remorse as they cleared away the Sounders and induction coils. The *primary* consideration was the telegraphic contest, and all other matters, for at least a couple of days were *secondary* subjects. At one end of the room was a long table covered with a spotless damask *slip*, and loaded with tempting *morsels*—plates (not zinc) of fruit, various decanters containing liquids not recommended by the Blue Ribbon army, piles of sandwiches, tea, coffee, lemonade, ginger-beer, soda-water, and *currant* cake for those who could not be *induced* to imbibe the strong waters. Competitors and visitors were invited to freely partake of refreshments, and the smiling hostess and pretty barmaid lent enchantment to the scene. The competitors were not allowed to enter the receiving-room with the judges; indeed, their lordships had no idea who they were trying, for, like prisoners who had already been "called to the bar," the competitors were only known by their numbers.

Mr. Horace Reed, of T.S., who is never so happy as when he is assisting at some kind of contest, took each member in charge, and led him upstairs to the little sanctum where the keys were fixed. Mr. Reed had a fine opportunity of putting his running powers to the test, for he was up and down stairs about every two minutes, and displayed an agility only second to our hairy ancestors. At 10.30 p.m. the judges adjourned the contest until the following evening at 6 o'clock. Only eleven competitors were present, and it was felt that the champion had not yet appeared.

THE SECOND NIGHT.

Soon after 6 o'clock the rooms began to fill, and the struggle for the championship began in real earnest. The judges were determined to lose as little time as possible, and the competitors were quite as anxious to know their fate.

The country representatives had all arrived, except Mr. Jackson, of Leeds, who was under medical treatment at home. A correspondent informed us that the plucky little fellow would have travelled to London wrapped in a blanket if his friends had not forced him to remain under their care.

We have heard a good deal about Mr. Trenam's splendid staff, and we believe the L.S. representative would have surprised even the London men. Mr. Butler, of Sheffield, seemed in good form, and we were confident that his manipulation would look well on the slip. The Wolverhampton representative informed us that he had to pay all his own expenses. He assured us that although the clerks at W.V. recognised him, and boasted of him as their man, they refused to subscribe a trifle towards defraying the cost of his trip to town. This is anything but liberal, and contrasts very unfavourably with the treatment of the other country representatives. Mr. Howells, of Swansea—an admirable clerk—proved himself a very rapid sender; and Miss Emily Davies, of the F Division, T.S., deserves a word of praise for her courage. This lady performed her task in a very able manner. She was not disqualified, but sent every word, and only lost a place by being a few seconds over the time. At about 8 o'clock, the engineering-room was crowded with visitors and competitors. There was hardly standing-room, and as the evening advanced the excitement increased, until the place became a perfect Babel. The room where the judges were seated pouncing upon every badly-formed letter that passed them, formed a strange contrast to the other apartment. Here all was quiet, the slip was gliding serpent-like out of the noiseless Wheatstone, before that stern tribunal. In this room were the representatives of the Press and some of the visitors. As each competitor was disqualified, the ladies present cast imploring looks at the judges, and, doubtless, set them down as nasty, heartless creatures. Withering looks had no effect upon those hearts of adamant; the judges were determined that only the best man should carry off the prize—and nothing escaped their observation. Soon after ten Mr. Douglas was handed three slips by the judges, who declared that the marks thereon were the best they had examined. The umpire, to "make assurance double sure," unrolled the slips and measured every dash. He seemed like Argus, to have a hundred eyes. Not a dot did he miss, and when he had spent nearly an hour in the examination of the three slips he looked so satisfied that all in the receiving-room felt that the judges would not be long over their verdict. At a little after eleven, when the last competitor had been tried, the scene was indescribable. Everybody appeared to be talking at once, but when the judges retired to deliberate, the suspense was painful, and a pall seemed to have fallen over the whole of the crowd.

In less than five minutes one of the judges called out:—Thirteen, first. Sixteen, second. Seven, third. A rush was made to the black-board—on which the list of the competitors was pinned. With one voice, visitors and competitors shouted, "Who's 13?" "Chapman, of the Stock Exchange," exclaimed Mr. Cronin, one of the principals of the schools. "We've hit upon the right man," cried the judges. Then began the cheering, and in the midst of the confusion we heard two or three persons shouting, "Dennett, Brooker, T.S. for ever," and other expressive sentences. When order was restored the result was written upon the board.

J. CHAPMAN, of the London Stock Exchange (time, 7m. 50 $\frac{3}{4}$ s.)	1
J. DENNETT, of the Central Telegraph Office (time, 7m. 30 $\frac{3}{4}$ s.)	2
A. BROOKER, of the Central Telegraph Office (time, 7m. 48s.)	3

Mr. Lynd then addressed the company, and said:—

"Ladies and Gentlemen,—I gather from the enthusiastic manner with which you have received the decision of the judges that you are perfectly satisfied with the result of the

Competition. The stern tribunal before which you have appeared this evening has awarded the prize to Mr. J. Chapman, Telegraphist of the Stock Exchange, and so far as I am qualified to judge the right man has been chosen. (Cheers.) Ladies and gentlemen, Mr. Chapman is not a mere manipulator; he is a scientific telegraphist—a man who, instead of wasting his leisure time in frivolity, has wisely employed his spare moments in the fascinating study of electrical science. Though unknown to the general public, our champion is not an obscure individual. Some time ago he invented a modification of the Morse key, which was submitted to the Department, and I believe he has made several good suggestions about the quadruplex apparatus. This is the man who has been declared the champion transmitter of Great Britain—(cheers)—and I think that the gentlemen of the Stock Exchange ought to feel it an honour to have him in their midst. (Cheers.) Ladies and gentlemen, I wish to take this opportunity of publicly thanking the heads of the Department for the great interest they have displayed in this your first competition. The beautiful 'Wheatstone' and the splendid Morse keys sent from the General Post-office for the trial of your skill, are substantial proofs of the good feeling on the part of the Engineer-in-Chief and his admirable staff. (Cheers.) They not only lent us the apparatus, but sent Mr. A. Graves, of the Electricians' Branch, to superintend the connections, and you know how that worthy gentleman looked after your interests on the first night of the Competition. (Cheers.) Mr. Preece, the eminent electrician, of the General Post-office, has taken a great interest in this Competition. From the very first that gentleman assured me of his cordial support. (Cheers.) Our best thanks are also due to Mr. Vyles, the electrician, of Gloucester-road, who officiated to-night in place of Mr. Graves; and I think we ought not to forget our Mr. Fladgate, whose mechanical skill has been at our service during both evenings. "Mr. H. C. Fischer, the Controller, although often called upon to perform stern and unpleasant duties, is a true friend to the British telegraphist. (Cheers.) As a proof of his sympathy, he requested Mr. W. T. Douglas, one of his superintendents, to act as umpire, and to look after the interests of the provincial competitors. The Controller also sent a message to me this evening regretting his inability to be present at the end through sickness at home. Gentlemen, I have noticed several competitors looking very downcast. Your disappointment is only natural, but you must not take it to heart. You have been defeated, it is true, but in what company? It does not follow because you have been unsuccessful that you are not first-rate clerks. You are all good men. Only the best manipulators entered the lists, and if some of you got a bit nervous, and failed to reach the goal, you have the satisfaction of knowing that you have done your best; and I know you will continue to do your best to the satisfaction of the Department you serve. (Cheers.) Ladies and gentlemen, I hope this contest will be made an annual institution (loud cheers), and a little later on we may again meet here to celebrate a similar event, for receiving as well as sending. (Cheers.) I hope you are satisfied with

your judges. (Cheers.) Never, in my experience, have I known men to work with such strict impartiality. They did not know who they were judging, and they have hit upon the right man. (Cheers.) In conclusion, ladies and gentlemen, I hope you have been satisfied with the exertions of myself and partner, Mr. Cronin. We have done all in our power to bring the affair to a successful issue. You know that I have your interests at heart. I have gone through the mill myself, and I can sympathise with you. In the language of the poet—

A fellow feeling makes us wond'rous kind.

As Editor of your journal, I assure you that I shall always be ready to take up cudgels on your behalf whenever you have a just grievance. I do not set myself up as an agitator (laughter), and I have no desire to be a *bête noire* to the heads of the Department; but I shall always use my influence as a journalist on behalf of that useful, but long neglected public servant, the British Telegraphist. (Loud applause.)

Mr. P. F. Davis, of the Anglo-American Cable Company, proposed a vote of thanks to the Editor and Proprietors of the TELEGRAPHIST, and in most flattering terms eulogised the hostess, and commented on the arrangements made for the reception and hospitable treatment of the competitors and visitors. Mr. Davis urged the clerks to show their appreciation of the good work Mr. Lynd was doing by supporting the TELEGRAPHIST—a medium by means of which clerks at home and abroad would be cemented in one common bond of union. (Loud cheers.)

Mr. Miell, in an amusing speech, said that at the next contest he should suggest the removal of the refreshment department to the judges' room—(laughter)—their lordships having had few opportunities of judging the quality of the good things provided by the promoters of the contest. (Laughter.)

DISAPPOINTED COMPETITORS.

Only the pencil of a Cruikshank could depict the faces of some of the defeated as they came downstairs, after sending their 250 words. Some were as pale as death, others trembled from head to foot, and a few were bathed in perspiration. Many telegraphists will laugh at this. Let them laugh when they are in the same position, *if they can*. All the competitors were first-class clerks, the *crème de la crème* of the Department, men who send thousands of words every day of their lives, and think nothing of it. Yet one short paragraph unnerved them. How was it that so simple a task on all ordinary occasions should prove such a terrible ordeal on this one? This is a question for the physiologist. It was a break-down of the nervous system, and no fault of the man himself. At all public competitions the man with the strongest nerve stands the best chance, and telegraphy is no exception to the rule.

HONOURABLE MENTION.

The judges particularly requested us to publish their opinion of two of the competitors who failed to reach the goal.

Mr. A. Walker was the first favourite at T.S., and his friends were most sanguine of his success. It is well known that this gentleman is short-sighted, and has to wear glasses. Soon after he had commenced his task, his spectacles fell off, and, in putting them on again, he scratched his eye. This accident caused Mr. Walker to rub out four times, which entailed disqualification. His sending was perfect and rapid, and we are sure that all our readers will sympathise with the gentleman and wish him better fortune next time.

THE NEW PENS JUST OUT.

"The Flying Scotchman and the Scotch Express pens are a complete triumph."—*The Oban Times*.

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Patentees: MACNIVEN & CAMERON, 23, BLAIR-STREET, EDINBURGH.

PENMAKERS TO HER MAJESTY'S GOVERNMENT OFFICES. (Established 1770.)

Sample Box, with all kinds, by Post, 1s. 1d. [ADVT.]

The Sheffield staff are to be congratulated in possessing so admirable a clerk as Mr. C. A. Butler. The quality of his sending was superb, and his speed was good. Four rubs out disqualified him. If he did not carry back the prize to S.F., he at any rate showed the London clerks what a provincial can do.

THE LEEDS REPRESENTATIVE.

The Leeds staff are under the impression that their man has not had a fair chance. After reading the following letter and our explanation, we leave the public to judge whether L.S. has reason to complain :—

Postal Telegraphs, Leeds,
Feb. 1, 1884.

SIR,—Kindly enter me in the competition for your Cup, for which I enclose one shilling.

Saturday, the 16th, would suit me best. I could leave here to arrive in London by 10 a.m. Should I be certain of the examination taking place in time for my returning Saturday night? Please drop me a line at your convenience.—Yours respectfully,

JOSEPH JACKSON.

To the Editor of "THE TELEGRAPHIST."

To suit Mr. Jackson's and the other provincial clerks' convenience, we decided to finish on the Saturday night, for, if there had been ties affecting the country competitors, how would they have liked to make another journey to London? Mr. Jackson's illness, we know, was genuine, and it is to be regretted that he was unable to compete; but he must not try to shift the blame upon the promoters of the contest, when an effort was made to meet his wishes; indeed, we offered to receive him, and take every care of him, if the doctor would permit him to leave home.

THE WOLVERHAMPTON REPRESENTATIVE.

We shall be very pleased to head a subscription to defray the expenses of Mr. Bunday, who appealed to the staff in vain. The amount (about £2) might easily be raised in small sums.

AFTER THE CONTEST.

On the Monday following the contest we had an interview with the Engineer-in-Chief (Mr. Graves), Mr. W. H. Preece, Mr. Willmott, and the Controller, Mr. H. C. Fischer. We were most cordially received, and from what we could gather, the result of the competition has given great satisfaction to the Department.

PRESENTATION OF THE PRIZES.

On Monday evening, at the West London Schools of Telegraphy and Electrical Engineering, 101, Uxbridge-road, the prizes were distributed to the successful competitors. Mr. W. Lynd formally declared Mr. J. Chapman, Telegraphist of the London Stock Exchange, as Champion Morse Transmitter for 1884. The Silver Cup was then handed to the winner. Messrs. Dennett and Brooks also received their share of the entrance-money.

Mr. Lynd, at the close of a brief speech, said that he had much pleasure in asking Mr. Chapman to accept a copy of Culley's "Practical Telegraphy," also a copy of Preece & Sivewright's "Handbook of Telegraphy." The great publishing firm of Longman, Green, & Co. had that day asked Mr. Lynd to present, with their compliments, those two useful works to the Champion.

Mr. Chapman, in a neat speech, thanked the Editor and proprietors of the TELEGRAPHIST for the Cup, and expressed his gratitude to Messrs. Longmans for their acceptable gift.

THE CHAMPION FOR 1884.

Mr. J. Chapman, the champion Morse transmitter for 1884, was born at Twickenham in 1860. He first learnt the Single-needle in 1873 at a railway station, and entered the Postal Telegraph Service in 1876. He was in the C Division at T.S. for two months, when he was removed to the Stock Exchange, where he has remained ever since. He was at the counter for three years, and for a long time he was considered a very poor manipulator; but, by dint of perseverance and hard work, he has raised himself to his present proud position. For some years he has devoted his spare moments to the study of electrical science, and the outcome of his labour is a transmitting key calculated to economise quadruplex working by dispensing with the pole changers; to improve signals by sending direct from the hand, instead of employing the electro-magnets; and to simplify the quadruplex apparatus generally. He made the key himself, and it was used on the B.M. Quad for three months.

Mr. Chapman, who is of middle height, has an intelligent and pleasant expression of countenance. He is single, and a man of temperate habits. The staff of the Stock Exchange are naturally very proud of the champion, and it is stated that Mr. Chapman is a good "all-round man," able to "receive" as well as he can "send."

Mr. Dennett, the second best transmitter, is a native of Sandown, Isle of Wight. He entered the service at Dover, in 1877, was transferred to Brighton in 1878, and removed to T.S. in 1881. He is at present in the C Division.

Mr. A. Brooker, the third best sender, is a native of Red Hill, Surrey. He entered the service at T.S. in 1878. He is in the F Division.

THE PRESS.

The press was well represented at the competition, for the journalist knows well enough the value of a skilful telegraphist. All the principal English newspapers have noticed the contest, and the graceful tribute paid to the special staff by the *Daily News* of Saturday, the 16th, must be very gratifying to all concerned.

Prize Sketch.

No. 3.—TOLD BY TELEGRAPHY.

I AM still rather young, but it was when I was what the ex-Prime Minister termed "juvenile and curly," that I told my love by telegraphy.

I had been two years stationed at Stemmington, a small town about eighteen miles from London, in the county of Essex, during which time I had conducted the telegraphic business in a satisfactory manner—no very arduous task, considering we did not average more than twelve messages a day. I was the solitary telegraph clerk at Stemmington, where telegraphy was only introduced at the transfer. The advent of the wire and clock-like instrument to the Stemmington Post-office was looked upon by the primitive postmaster as something marvellous and beyond human comprehension. He used to watch me send messages with astonishment, but would never touch the instrument for fear it exploded! He was too old, he said, for "these new-fangled things."

When Government purchased the telegraphs, a wise man (since, I believe, gone to the East) hit upon the brilliant and economical plan of pouring into the service a copious stream of young ladies to meet the great and growing pressure of work at the Central Telegraph Office in London. I blessed daily for about two years the sagacious head that opened "fresh fields and pastures new" for feminine labour. It transformed my dry work into a labour of love. All the messages I transmitted passed through the Central Office, and were mostly dealt with by Violet Massey. For my readers' sake, for the sake of our time-honoured friend Poetic Justice, I

regret my inconstancy. I deeply deplore the lamentable, brutal fact that my hand does not shake as I write that name, my eyes are not suffused with blinding salt tears, my lips do not quiver tremulously, and my body is not hysterically convulsed. But Violet Massey was the cherished name of the sweet girl to whom soon after my induction, when not engaged on official business, I hammered all day long on my instrument to the old, old tune of "I love you." For two years we talked incessantly on the wire, and my romantic imagination dwelt so much upon her that I had learnt to love her as impetuous youthdom of eighteen always has, always does, and always will love—that is, insanelly. The beautiful utter absurdity of the present case will be obvious when the reader bears in mind that though for two years we had signalled "soft nothings," we had never met!

We are frequently told, if walls could but speak how marvellous would be their utterances. But not more thrilling tales could they tell than the many miles of wires. The traveller passes them on the railway; the people who are "something in the City," walk over acres of wire; and those that go down to the sea in ships sail over leagues of it; but your business man or your sporting man never dreams of what hopes and fears, joys and troubles, love-makings and heart-achings, congratulations and denunciations, they carry, besides his shilling message about the price of stocks, or the latest odds on the Derby favourite.

Some tissue of romance will force its way into all professions and trades, no matter how monotonous they may be, and that London shipowner would write to the *Times*, tear his hair, or perhaps swear a little, if he knew his message about that cargo of maize is being delayed while Miss Agnes Smith and Mr. Frederick Brown are utilising the wire for a little amiable flirtation by way of relaxation. The hardened villain in deep melodrama is often made to lightly observe before attempting some diabolical murder, "Ha! ha! Dead men tell no tales." So it is with most of our trusty wires, which, as a medium for love-making, boast this advantage over the penny post—that after telling its story it is as silent as the grave. This I take to be a rather fortunate circumstance for telegraphists generally, and myself in particular, because if any record had been kept of our ravings on the Stemmington wire, and confronted us now in black-and-white, it is highly probable that I should "make tracks" for the nearest lunatic asylum; and it is just possible pretty Miss Violet would gasp hysterically, and ask herself wonderingly, "How could I have been so foolish?"

At last I wrote to Violet, entreating her to send her photograph. No doubts had ever assailed me as to her comeliness. I felt sure she must be beautiful because she conversed (telegraphically) so prettily. Nor was I incorrect in my conjecture. Her reply came, enclosing the portrait of a lovely girl, with an oval serene face, large expressive eyes, curly hair, and the proverbial "rosebud mouth." I was a dreamy, solitary, foot-in-the-grave sort of youth, much given to allowing my imagination to run riot. In short, I was what money-making, world-worn people would call a sentimental fool; and as I draw back the curtain from the past I am free to confess I may have merited that title. At any rate, I would bet "a sovereign to a gooseberry" there never was a photo. kissed so many times as Violet Massey's was for the next few days. With this consoler of my lonely hours came a short letter asking for mine in return. Then, for the first time, I realised the folly of my love. How could I continue to Violet the deception I had as yet practised as to my unfortunate condition? I was slightly deformed; to speak more precisely, I was a hunchback—not by any means one of those puny pitiable objects, "sent into this breathing world" hump-backed and dwarfish. I was of average height and rather strongly built. My thickened shoulders were caused by an accident in infancy, when a careless nurse-girl let me fall down a flight of stairs. Female society had been for me almost an unknown pleasure, and now the question arose, Should I tell my charmer about my misfortune, or conceal it as long as I could? After much cogitation I chose the latter course. My features, I knew, were passable, and had more than once been called "interesting." What, then, could be easier than to have merely my face photographed and send it as my *vera effigies*? This I did, and had the supreme satisfaction of being told the next day by Violet that she liked the copy so well that she longed to see the original.

Then came the bitterness that seems to be mingled so strangely with every sweetness. I had suffered so many petty heartaches, so many galling slights, that, sanguine as my nature might be, I could not hope to find her more charitable than the rest of the world; but, rather conscious of my own deceit in keeping back my deformity, anticipated upbraiding of a harsher kind. Suspense is the most harrowing of all anxieties, and at last my faltering nature determined to see her, whatever the result of the interview. So, with many misgivings, I wrote and solicited a meeting. Years have come and fled since then, and many feelings have been awakened within me and fled likewise, but I can yet recall vividly the mingled

pain and pleasure with which I received her answer acceding to my request. She promised to meet me at three o'clock the next Sunday at St. Margaret's Church, Putney. In the interim, I was alternately the "happiest fellow" and "most miserable dog" in Christendom.

Stemmington was open from seven to ten on Sundays, and, as the clock struck ten, I locked the office door, and tore to my lodgings to make myself "smart," which process being completed, I was for the moment satisfied with the reflection from the looking-glass, but, just as I turned to leave, the truth-telling mirror revealed that cursed deformity, and for a few moments I hesitated about going. Of course, I did go, but with grave doubts as to my reception. Directly I arrived in London, I made the best of my way to St. Margaret's Church, Putney, and found I was a quarter of an hour before my time, which proved to me *un mauvais quart d'heure*. The serenity enshrouding the venerable ivy-clad church chafed instead of soothed me.

Exactly as its old clock chimed three, I saw the living Violet Massey coming towards me, more beautiful even than I had imagined. She came towards me with a sparkling eye, a crimson blush, and an outstretched hand.

When she was only a yard from me she saw it.

Her hand dropped to her side, the crimson blush gave way to a momentary pallor, the soft light died in her eyes, from whence fire now flashed upon me. I could not meet their beautiful blaze; I closed my eyes and waited silently, with a forced calmness. Would she be more generous than others? I dared not ask her. I simply held out my hands, supplicatingly. She hesitated but one moment. I felt a soft, warm hand nestling in one of mine, forgivingly, and then, under the kindly shadow of the sheltering church, she was in my arms, and the soft light shone again from her dazzling eyes as she received, passively, my kisses—kisses of love and gratitude. I could hardly speak my gratitude; could only murmur, no louder than the birds that were twittering above us.

There the old story was told again, and the words I had trusted to the wire I now told from lip to ear, as we walked quietly through the graveyard down to the river, and many Sundays after that our love was whispered to the "silvery Thames."

There was but one drawback to my happiness. Violet, profuse as she was in her affection, was very reticent as to herself, her parentage, &c. She once said, "I am Violet Massey, aged 20, a telegraph clerk, and I like you very much—what more do you want, Mr. Ungrateful? Is not that enough to make you happy?" Of course it was, and I had to be content.

I had basked for about two months in this sunshine, when Violet insisted that I should come in the morning, upon the following Sunday, and be outside the church at ten o'clock.

"I really can't come in the morning," said I; "why not the afternoon, as usual?"

Violet, angrily: "Never mind why; I order you to come, sir."

"Who is to look after the office? I shall have to leave at eight o'clock, and there is no one who can work the instrument."

Violet, unconcernedly: "Oh, very well; if you think more of your paltry office than of me, don't come."

"Oh, yes, but if a message comes and I am not there I may be dismissed; and you would not like your Charlie to be thrown upon an unsympathetic world, would you?"

Violet, tenderly: "And you would not like your Violet to be miserable all the week, would you?"

That quite settled the matter, and I determined to chance whether there was any message, and promised to meet her at ten the next Sunday at the old church. Upon this Sunday Violet seemed rather strange, I thought. Her lips were quite cold when I kissed them, and as she departed I fancied I detected a half-regretful shade upon her pretty face.

That memorable Sunday I shut the office up at eight, trusting Providence would befriend me, and no one would be so absurd as to want telegrams sent that morning. If they did they might wait, I thought, as the train took me once more to London. I was a few minutes before my time, and, waiting outside the porch, I discovered that the doors were open.

I had hardly space to give it another thought ere the inner doors were thrown open, and Violet Massey, looking like an angel, dressed as a bride, came out leaning on the arm of her newly-made husband. I was dumbfounded, and could only gaze doubtfully in the face

THE system of training pupils at the WEST LONDON SCHOOLS OF TELEGRAPHY is based on the Government plan. Learners are not only taught to manipulate the Sounder, Printer, and Needle Instruments; they are thoroughly initiated in the duties of a Telegraph Office. The nervousness consequent on taking charge of a circuit is reduced to a minimum by the perfect system of training at these Schools. Send for a Prospectus to the PRINCIPALS, 101, Uxbridge-road, London, W.—[ADVT.]

that I had learned to love. She met my gaze with the sweetest and most heartless smile on her serene face and passed on.

I stood there long doubting the harsh reality of what I had seen, clinging despairingly to the thought that it could not be Violet Massey that was married!—Violet Massey, who, a week ago, dismissed me with a kiss and "God bless you!"

As the sexton was locking the doors, I caught hold of him and asked him who had been married that morning?

"Mr. Frederick Hardman and Miss Violet Massey. You don't look well, young man."

I went back to Stemmington with a brain on fire and a heart like lead. Next morning the Postmaster informed me I should get into a nice row, he thought, as there were two messages waiting to be sent that ought to have gone yesterday. He also put a letter into my hand, which had just arrived for me. It was short, almost epigrammatical, and ran as follows:—

"My Poor Charlie,—Learn a lesson. Never deceive a woman.

If you had told me before me met, you had that horrid thing on your back, I should have told you I was going to be married. You are rather a nice boy, and I so much enjoyed your society that, when we return from our honeymoon I shall persuade my husband (don't you think him handsome?) to ask you to tea one Sunday, that I may hear you say you forgive—Your sincere little friend,

VIOLET HARDMAN."

I did learn a lesson, one that most of us have to learn. I've never seen her since, but I've quite forgiven and nearly forgotten her, and my wife and I often laugh heartily over the story of my foolish first love.

A. S.

Editorial.

THE gentlemen who have been stimulated by F. E. B.'s letter which appeared in our February issue, are directed to look at the last page but one of this number, where they will find a detailed account of our scheme for forming a Society of Telegraphists. In dealing with this matter, we feel we are taking a step in the right direction. Any movement likely to create a spirit of emulation which must result in the moral and intellectual improvement of the staff, is sure to meet with the sanction of the Department. The man who spends his leisure moments in the study of the laws of that mysterious power which he so skilfully guides, must be of greater value to the service than the clerk who wastes his time and money in unprofitable occupation or idleness. The members of the proposed society will be marked men. The mere fact of their election will stamp them as good servants of the Department and the public. When once the society is formed and the proceedings published, the chiefs of the G.P.O. will know where to look when important vacancies occur. There will doubtless be a deal of disappointment felt among those whose qualifications will not entitle them to admission to the society. To them we say, "Study, study, study." The instruments are constantly before your eyes, and a copy of such a work as Preece & Sivewright's "Telegraphy" can be purchased for a trifle. If you have scientific inclinations, you will find plenty of facilities for qualifying yourself for admission. Many of our correspondents complain of neglect, the want of real encouragement, and infer that the heads of the Department ought to offer some incentive to technical study. We cannot conceive such eminent men as the chief engineer and the electricians of the Postal Telegraphs capable of any dog-in-the-manger feelings towards the staff. We happen to know something about those gentlemen, and we can assure our supporters that their antecedents prove them to be, like Cæsar's wife, above suspicion. Do not forget that they all graduated in the old companies, and if they are obliged to keep to their pedestals it is not because they love the pedestals. The Government has stuck them where they stand; and if, like Don Guzman, they were to cast aside their dignity, leave their columns, and walk about in the crowd, the huc and cry would be instantly raised, and "the service is going to the dogs" would be on every outsider's lips. The encouragement given by the chief officials to the promoters of the late contest ought to satisfy the Prince of Grumblers that their sympathies are with the staff, and we are certain that they will never fail to recognise budding talent whenever it is brought under their notice.

We regret that the "Practical Telegraphist" will not be ready before March, in consequence of the non-arrival of the names of the Foreign Clerks for the Directory portion. We crave the kind

indulgence of our supporters, trusting that the book itself will repay them for the waiting. Names for the Directory will be received until March 20.

IN future we shall consign to the W.P.B. all communications written in pencil. Some of the reports received this month are almost illegible. Ink is cheap and plentiful enough. All contributions written on both sides of the paper will share the same fate.

A LARGE amount of correspondence is crowded out this month, and many answers to correspondents are obliged to stand over.

A FULL report of the dinner given to the Champion by the members of the Stock Exchange staff will appear in our next issue.

OUR readers are asked to send their votes for the writers of the "Prize Sketches." If a subscriber thinks No. 1 deserves the prize, a post-card should be sent to the Editor; or write on the card: "I vote for No. 3," or No. 2, as the case may be. The cheque for One Guinea will be sent to the author who receives the largest number of votes on March 15. "The Russian Telegraphist," by Odin, is the title of the next Prize Sketch.

MESSES. MACNIVEN & CAMERON, of Edinburgh, have sent us a sample-box of their latest novelty, "The Scotch Express Pen." Telegraphists are rapid writers, and, having to use the pencil in the office, they naturally prefer a pen that will glide smoothly over the paper. We have used the "Waverley" pen for years, and we can conscientiously join in the general chorus, and repeat,

"They come as a boon and a blessing to men,
The 'Pickwick,' the 'Owl,' and the 'Waverley' pen."

T. S.* Items.

ST. MARTIN'S FOOTBALL CLUB v. MORTON RANGERS.—The St. Martin's F. C. played their return match with their victorious opponents in the London Association Cup contest, on February 16, at Wandsworth Common, and on this occasion they most emphatically reversed the previous verdict by winning by four goals to nil. We have to congratulate the Club upon the remarkable improvement observable in their play, and we venture to predict a very bright future for them. Gilliver was in grand form, securing three direct goals, and one off an opponent's body. The team played well together, and was greatly assisted by the remarkable ability displayed by Walker, and the fine dribbling by Avery. Details:—A lot of time was cut to waste, but when a start was made the St. Martin's made a vigorous incursion into their opponents' territory, which resulted in goal No. 1 during the first five minutes. The arrival of the first eleven from Shepherd's Bush, where their opponents had failed to put in an appearance, did not make any difference, as within the next ten minutes Gilliver scored goal No. 2, and the total was increased to 3 before half time. The change of ends and the advantage of the wind did not prove beneficial to the Rangers, as Walker, after averting a vigorous onslaught by the celebrated F. Fife, despatched the ball to Avery, who dribbled it right over the field, when goal No. 4 was beautifully kicked by Gilliver. The Morton Rangers now played with desperation, but owing to the splendid defence offered by the St. Martin backs (Howie and Webb) they did not succeed in scoring a single goal. F. Fife, Macpherson, Bristor, and Fraser played well for the Rangers.

THE annual dinner of the Engineers of the metropolitan district took place at the New Gresham on Jan. 18, when, after due justice had been done to the numerous items of a most *recherche* menu, an agreeable evening was spent. The toasts were enthusiastically received, and so were the musical efforts of the company, amongst whom Messrs. O. Bathurst, C. Brodie, and Houston shone very prominently.

THE ELECTRIC B. & A. CLUB.—The third annual ball of this club took place at the Holborn Town-hall, on Feb. 12, and, as usual, was a great success. With 150 present, dancing commenced soon after 9 o'clock, to the admirable music of Baker's band, well known from

* Central Telegraph Office, London.

its connection with this beautiful hall, and, with the usual interval for supper (which was supplied by Messrs. Spiers & Pond in excellent style), the dancing was kept up until 4 a.m., when the well-pleased company separated—universal regret being expressed that the ball only took place once a year. The controlling, superintending officers, and the ladies of the office were well represented. The programme, which comprised all the most popular dance-music, and the general arrangements were arranged and carried out by the committee of the club, to whom all praise is due. May success always attend their efforts.

THE Electric Cricket Club wish to arrange two matches (home and home) with any large provincial town within about 100 miles from London during the coming season. Communications to be addressed to F. Marshall, Hon. Sec. E.C.C., Central Telegraph Office, London.

We understand the next performance (the last of the season) of the St. Martin's Dramatic Club will take place on Friday, March 21, at the Wellington Hall, Islington. The chief attraction will be a farcical comedy, and we hope they may have a bumper, but, from what we have seen since starting this journal, entertainments of any kind are but scantily patronised at "T. S."

By the time this is in print, we believe, what is known as the rotary duty for the night staff at "T. S." will again be in vogue. It is to be regretted that a hasty decision has been arrived at in this matter by the heads of the Department. If the night staff had been applied to it would have been found that they are almost unanimous in the strong belief that permanent night duty is far more preferable for their health than the incessant chopping and changing, which thoroughly upsets the system. What about the supervisors on night duty? There are some men on night duty who for years have never had a day's illness. But the individuals who frame this rule are men who have never had to contend against the harassing worry and constant unsettling of the ways of living rendered necessary by such an unreasonable duty.

London District Offices.

EASTERN CENTRAL.

ABOUT fifty of the post-office countermen employed in the Eastern Central District held their annual dinner at the Masons' Hall Tavern, E.C., on the 2nd instant. A most substantial and varied repast was provided, to which ample justice was done. Messrs. Ryall, Nelian, Bolton, Allen Cuthbush, Colmer, Law, Holmes, and others contributed greatly to the pleasure of the assembly by their excellent singing and recitations. Mr. W. Lamburn presided, ably assisted by Mr. Boxall. After a vote of thanks to the stewards and the chairman, the meeting terminated at 11.30, each one expressing his satisfaction at having spent a most enjoyable evening, the only regret being that owing to the exigencies of the service it was found necessary to curtail the programme provided.

PADDINGTON.

CHURCH PARADE.—On Sunday afternoon, Jan. 20, a very large gathering of Telegraph messengers belonging to the Paddington, Western, and North-Western districts, assembled at the Spring-street district office, whence they marched, headed by the Postal Telegraph Drums and Fifes, under the charge of Mr. Jno. Cullum, to Christ Church, Lancaster-gate, where a special service was arranged, and an excellent sermon was preached by the vicar, the Rev. Canon Boyd Carpenter, M.A. The second hymn, "The Church's One Foundation," was effectively accompanied by the band. A large congregation, the postmaster, and numerous departmental officers were present, and the offertory was devoted to the funds of the Telegraph Temperance Society.

CHARLES READE, D.C.L., the distinguished author of "Never Too Late to Mend," says:—"I have been long acquainted with the Senior Principal of the West London Schools of Telegraphy and Electrical Engineering. He is a devoted lover of science and a public writer on scientific subjects. He is a Telegraphist of long standing and well able to teach the use of the various instruments. I happen also to know what high prices and unfair advances are often obtained from pupils in telegraphy, especially from females; and I think it a boon to persons of that sex, and to the public, that the Principal of these Schools offers to teach telegraphy, as other arts are taught, in a straightforward, honest way, and on fair terms proportioned to the advantage any able, industrious pupil can derive from so able and zealous an instructor." Send for a Prospectus and the Opinions of the Press to the PRINCIPALS, WEST LONDON SCHOOLS OF TELEGRAPHY AND ELECTRICAL ENGINEERING, 101, Uxbridge-road, W.—[ADVT.]

ANNUAL CONCERT.—The annual concert of the Telegraph Temperance Society took place on Monday evening, Jan. 21, at Steinway-hall, Lower Seymour-street, W., which was filled to overflowing. As no money was taken at the doors, in order that purchasers of tickets might be sure of seats, many intending visitors were unable to obtain admission. Mdle. José Sherrington, Miss Nellie McEwen, Mr. Alfred Moore, and Mr. Lawrence Meager are too well known to need commendation, while Miss Lonsdale, better known as "Mrs. Sterling's pupil Ruby," secured a perfect ovation by her spirited rendering of the quarrel-scene from "The School for Scandal." The excellence of this concert is now so well known that it will be necessary to engage a larger hall for future entertainments.

TELEGRAPH TEMPERANCE INSTITUTE.—The annual winter social gathering of the members of the above Institute took place on the 5th and 12th of last month. The gathering was thus divided to meet the alternating early and late duty of the members, so that all should have an opportunity of participating. On each occasion a bountiful repast was provided, followed by a musical entertainment, both of which were heartily enjoyed and duly appreciated. This Institute has been established some eight years, and is provided with every requisite for the intellectual and social improvement of its members. The junior members of the service in the Western and Paddington Districts are indeed fortunate to possess such an Institute. Friends interested in the work should pay a visit to this Institute. We are sure the Hon. Sec., Mr. Jno. Cullum, will cordially welcome them.

SPECIAL WIRE STAFF.

THE annual dinner of the "special wire" staff took place on Saturday, Feb. 9, at the Crown Hotel, Exeter-street, Strand, where an excellent menu was provided and well served, and to which, it is needless to mention, the members of the staff did full justice. Mr. Aldis (*Glasgow News*) worthily occupied the chair, assisted by Mr. Ward (*Yorkshire Post*), vice-chair. A most convivial evening was spent, the musical programme after the dinner being contributed to by nearly the whole of those present, many songs, both comic and sentimental, being sung, most of which were well selected. Among others, Mr. Moul rendered "Tom Bowling" and "She wore a wreath of Roses," which were well received. "The City Swell," sung by Mr. Bragger, "Sailing," and "The Four Jolly Smiths," by Mr. Owen, "Good old Jeff," by Mr. Dillon, and "Rhine Wine," by Mr. Gorge, were all very creditably performed. Mr. Williams caused great merriment by reading a sermon on "Old Mother Hubbard went to the cupboard," and Mr. Gamlin by singing "Hush-a-bye baby, didn't he yell!" and "Her front name is Hannah(er)." Other able vocalists were Messrs. Bulmer, Melvin, Shaw, Rollo, Murphy, Newing, and Benson. After a few words from the chair on behalf of the committee, thanking those present for the support accorded them, which is typical of the good feeling that exists among the staff, it was unanimously agreed to have a summer excursion, which will probably take place some time during August.

Provincial Items.

ABERDEEN.

ABERDEEN TELEGRAPH MESSENGERS.—The annual social meeting and ball of the Aberdeen telegraph messengers was held in the Silver-street Hall, on Friday 25th, and, as on previous occasions, it was attended with great success, the messengers and their friends turning out in large numbers, and the entertainment being thoroughly enjoyable. Mr. John Gordon, delivery clerk, occupied the chair, and the other gentlemen occupying seats at the principal table were Mr. E. Summerfield, engineering department; Mr. P. Salmond, sorting clerk; and Mr. W. D. Ross, *Evening Express*. The Chairman, after expressing his pleasure at being present, said the messengers were a body of little men whose duties were by no means easy or pleasant. They might be said to be always on duty—during the night as well as during the day. At midnight, or in the small hours of the morning, they might be found prowling about in search of an addressee whose whereabouts were difficult to localise. (Laughter.) He was in a position to state that their conduct and the way in which they performed their work had been always highly satisfactory. (Applause.) He was glad to say that the work of the Department was still on the increase. During the past year the total number of messages dealt with in the Aberdeen office was 589,423, which was an increase over the previous year of 31,067. The number of messages delivered in Aberdeen by the messengers was 199,265. The increase, although large, was, in his opinion, small to what it would be next

year. As everybody knew, the sixpenny rate was expected to be introduced on October 1, and a large increase might be expected. In fact, people might begin to think it quite unnecessary to write at all, and they might see the messengers flying through the streets like lightning, with their leather pouches full of sixpenny telegrams. (Laughter and applause.) Great preparations were being made by the Department to cope with the additional business it would certainly have to deal with. The arrangements for Aberdeen were very extensive, and no doubt the staff, not only of clerks, but of messengers, would have to be largely increased, and next year he expected that the messengers' meeting would be one of gigantic magnitude. (Applause.) An excellent musical programme was then rendered. At the close of the soirée the assembly was held, the music being supplied by Mrs. Allan's band, Messrs. Kennedy and Milne officiating as masters of ceremonies. The proceedings throughout were of a very pleasant nature, and all who took a part in the entertainment heartily deserved the vote of thanks accorded them.

BOURNEMOUTH.

BOURNEMOUTH is fairly full, and telegraph work heavy. A few weeks hence will see the winter season at its height. Mr. C. H. B. Patry is recruiting his health here, and we shall be glad to learn he has derived benefit from the change. The "Practical Telegraphist" is anxiously awaited, and will be taken by each member of the staff.

BRADFORD.

FOOTBALL.—(Bradford Postal Telegraphists and Normanton P.O.)—A most agreeable and well-contested match was played between the above-named clubs on Wednesday, Feb. 6, on the ground of the former at Park-avenue, in which the Bradfordians proved victorious by two tries and two minor points to three minor points. The tries were obtained by Robinson and W. Scott, the one by the latter after a magnificent dodgy run through all his opponents. Parratt also was conspicuous for his fine running and clever passing. For the visitors Wheeldon and Hutchinson were most prominent.

We beg to acknowledge and thank BM, NT, and HU for the very pretty Christmas and New Year cards which we received from them.

On Thursday, January 24, the Bradford telegraphists held their first soirée and ball in the Masonic Rooms, Salem-street. For some weeks previous to this date the Committee, consisting of Messrs. H. Rhodes (Hon. Sec.), Harrison, Clayton, Thornton, and Kent, had been unremitting in their efforts to make the affair a success the result being that fifty couples sat down to a substantial knife and fork tea, after which a capital miscellaneous programme was gone through. The pianoforte duet by Messrs. Balaam and Wilkes was well received, and a solo by the former gentleman was played in his well-known masterly style. Mr. McIlwraith's readings of "The Nomination," and "The Swallowed Sixpence," were very amusing, as was also a recitation by Mr. Wilkie, entitled "My Old Hat." Miss Mellor contributed two songs, "When the tide comes in," and "Ruby," in a style showing a well-trained voice. Miss Shackleton also contributed two songs, "My Dearest Heart," and "Sing Sweet Bird," in which she gave promise of considerable ability. "Sailing," received a vigorous rendering from Mr. Allcock, who afterwards sang "The Temperance Band" (in character), as he only can sing it. The same gentleman also took part in a duet, "Larboard Watch," with Mr. Kent, which was rendered in a very pleasing manner, the latter gentleman afterwards singing, "Ah! Never deem," with good taste. One of the gems of the evening was the rendering of the "Three Gifts," by Mr. Thornton, his rich tenor voice being heard to great advantage. He and Mrs. Thornton afterwards sang a duet, "Home to our Mountains," in which the sweet blending of their voices secured for them very hearty applause. "The Meeting of the Waters," received a very careful rendering from Mr. McShee, and the "Tar's Farewell," by Mr. Mountain was well rendered. Mr. Clayton's humorous rendering of "McSorley's Twins" was very good, and that gentleman afterwards gave a mimetic sketch entitled "Quack Doctors," which produced great amusement, and with the aid of Mr. Allcock as a deaf patient, succeeded in keeping the audience in a convulsive state of laughter during the whole of his illustrations. The accompaniments were played by Miss Gledhill in a very efficient manner. Mr. Benn, in a short speech, moved a vote of thanks to the committee, who had worked so hard to

make the soirée so great a success. Mr. Ward, in a few happy remarks, seconded the motion, which was carried with great applause. Mr. Rhodes, in responding on behalf of the committee, said that as this was their first attempt, it had been decided to limit the number of tickets to one hundred, though so great had been the demand by friends of the staff that double the number could have been sold. He thanked the ladies and gentlemen who had come forward so readily to entertain them with their musical and other efforts. Dancing then commenced, and was kept up with great spirit until a late hour next morning.

CARDIFF.

SOIREE.—The telegraphists' annual soirée, which took place at the old Cardiff Arms Assembly Rooms, on Monday night, January 24, was one of the most successful gatherings that have taken place during the winter. There was a large and influential party present, including representatives from Newport and Gloucester. The songs rendered by Misses Smith, Brewer, Browne, and Atkinson, and Messrs. Bowles, Woolridge, Baxter, and Stretch gave great satisfaction. The "Lost Chord" was admirably given by Mr. Livesey as a cornet solo. Dancing was kept up till the early hours, and those present enjoyed themselves thoroughly. Much credit is due to the indefatigable exertions of the committee—Misses H. Browne, Brewer, Baiss, and L. G. Browne, and Messrs. Baker, Baxter, W. H. Smith, and W. Bowles—who spared no trouble in carrying out the arrangements.

CARDIFF POST-OFFICE PROVIDENT SOCIETY.—The annual meeting of this society was held at the H.P.O., on Saturday, February 9. Amongst those present were the president, F. C. Webber, Esq. (postmaster; vice-president, Mr. S. Hudson (chief clerk); Mr. T. Bazeley (superintendent); and Mr. W. Loynes, secretary. After a long discussion as to the advisability of increasing the sick allowances 25 per cent., a sub-committee was appointed to revise the rules of the society, and report to a general meeting whether the funds will allow of the desired increase. The balance-sheet for 1883 shows a capital of £281. 4s. 6jd.

THE ELECTRIC CRICKET CLUB.—The annual dinner of the above club took place at the Philharmonic Restaurant, on Saturday, Jan. 19, when about sixty sat down to an excellent repast prepared by the host (Mr. Barry). Mr. H. Baker took the chair; the vice-chairs being occupied by the captain (Mr. C. F. Walkley) and the vice-captain (Mr. A. Davies). The Chairman, in proposing the toast of "Her Majesty," said it was a toast proposed in every assembly of loyal Englishmen. He remarked upon the advancement and progress made in science by Huxley, Tyndall, and others, and instanced the progress made in our own profession—telegraphy. (Applause.) The Chairman next gave the "Army, Navy, and Volunteers," remarking that the position we now occupy is mainly due to the valour of our soldiers and sailors, coupling with the toast the names of Messrs. A. Roberts and W. H. Smith. The former, in responding, thanked the Chairman for the manner in which he had eulogised the services of the Army and Navy, and with respect to the Volunteers, he was proud to be able to say that they were never in a better condition than now. Mr. W. H. Smith also responded, making mention of the Post-office Volunteer Corps. (Cheers.) Mr. A. Davies then sang "The British Lion," and Mr. Perkins followed with "The Parson and the Clerk." Mr. J. Crane, in giving the toast of the evening, "The Electric Cricket Club," congratulated the members upon the improved form displayed during the last season, and wished the club success in its future engagements. Toast drunk with musical honours. The captain, in responding, expressed pleasure at the warm manner in which the toast had been received. Notwithstanding the difficulties attending practice last season, the club won their first three matches. (Cheers.) The vice-captain also spoke to this toast. In proposing the toast of "The Ladies," Mr. W. Bowles said, this toast was certainly a most bewitching one, and without any eulogising would meet with a hearty reception. He spoke to their being admirers of the game of cricket, and the players were stimulated by their presence to good and careful play. We were not only favoured with them in the cricket-field; but in the office, where their smiling faces enlivened the monotony of the work. (Applause.) Mr. H. Baxter, in responding, thanked them on behalf of the ladies, but, thought they might have found a better champion than himself. The toast of "The Visitors" was very ably responded to by Mr. H. Perkins. "The Chairman" and other toasts followed. During the evening songs were capably rendered by Messrs. W. Bowles, J. Morris, A. Davies, Woolridge, Hussey, and H. Perkins.

DERBY.

THE SIXPENNY TARIFF.—Bewildered Postmaster: "Where shall I get another Telegraphist from, when the sixpenny tariff comes into operation? The work will be more than doubled, and I have only one clerk." The answer is—Send to the WEST LONDON SCHOOLS OF TELEGRAPHY AND ELECTRICAL ENGINEERING, 101, Uxbridge-road, W., where ladies and gentlemen are thoroughly trained in Commercial Telegraphy, and office duties.—[ADVT.]

MIDLAND RAILWAY.—We think the promoters of this journal are to be congratulated upon the success which is attending the advent of the TELEGRAPHIST. It is being well received by the operators of this company, there being already a dozen subscribers at DY

Rail, and others of the staff, after seeing the first number, are inquiring after them. We should like to see a little more apparent interest taken in the paper by our railway confrères of the country, thus making an already highly interesting journal still more so.

We have a large office and staff here—that is, for a railway office—there being upwards of forty clerks and eighteen messengers.

DURING the past year there have been several matrimonial matches effected by different members of the staff with every sign of satisfaction to the contracting parties, and if what we hear is correct, the present year will not be an uneventful one in the same direction.

We have had rather a heavy Christmastide, but we seem to have got over it. We are rather curious to know how far the six-penny rate will affect us, and are watching the development of the scheme with no small interest.

DUBLIN.

THE promotion of Mr. R. Keating to be C-in-C and Mrs. Bell and Mr. P. Brady to the first class have given universal satisfaction.

THE TELEPHONE IN DUBLIN.—Your numerous telephone readers will doubtless be agreeably surprised to hear that Dublin, for its size and commercial status, can boast of a very extensive telephone system. The citizens of the "Second City" have taken rather kindly to the use of the telephone, there being now close on 600 subscribers connected with three exchanges:—First, the Central and Southern, situated in the Commercial Buildings, on the top of which is fixed a gigantic frame (Derrick), and from its four sides over 400 wires radiate; second, the Northern City Exchange, located in Abbey-street; and the third connects the fashionable suburban districts of Rathmines and Rathgar. The Exchanges are also connected with the different fire-brigades and police-stations, and it is intended to have street telephone stations, to which admission will be gained by means of a private key, and as each station will be in direct connection with the police and fire-brigade stations, assistance will be obtained at any time in a couple of minutes. The various hospitals are "through" to the respective residences of their medical men, and the company have also established what is considered the largest private exchange in the United Kingdom—viz., that of Messrs. Guinness & Co. (the well-known brewers), which connects the thirty-four departments throughout that vast concern. Added to the above there are also 125 private lines in the city. The company give constant employment to fifty wiremen, &c. Orders are still coming in, and it is estimated that before the end of the year another hundred subscribers will be added. The engineering department is ably conducted by Messrs. Stott & Roden (the former being well known in the Manchester and Bolton districts), and the company have been fortunate in securing the services of a courteous and industrious secretary in Mr. J. F. Butterworth. It is noteworthy that during the late disastrous gale the telephone lines in Dublin bravely withstood the fury of the elements. Out of the many exposed poles and wires throughout its network system, but two wires were placed in contact. This speaks volumes for their sound practical construction and maintenance.

EDINBURGH.

ON Friday, Feb. 1, the telegraph-boy messengers employed in the General and Branch Post-offices in Edinburgh held their thirteenth annual entertainment, in the New Waverley Hall (formerly the G.P.O.), under the presidency of Andrew Gray, Esq., Superintendent of Telegraphs. The messengers, who appeared in uniform, were admitted free of charge, through the kindness of the ladies and gentlemen in the various departments of the Post-office, who contributed towards that object, and the entertainment consisted first of a substantial tea, followed by a concert, a service of fruit, and a dramatic performance. The vocal and dramatic efforts were in part contributed by members of the staff, four messengers also taking part in the programme. The farce performed on the occasion was that of the "Arca Belle," and the efforts of Mr. D. Scobie, as "Pitcher" (a policeman), Mr. J. Winlay, as "Tosser" (a soldier), and Mr. Nisbet, as "Walker Chalks" (a milkman), were heartily appreciated. The "Penelope" (the arca belle) of Miss Scobie left nothing to be desired. The entertainment was a great success, no fewer than 600 persons being present, including the superintendents and some of the leading gentlemen in the Post-office. The number of messengers entertained was 112.

GLASGOW.

THE following promotions have taken place here:—Mr. H. R. McLean from first-class telegraphist to clerkship (postal department); Mr. James Webster from first-class telegraphist to clerkship (telegraph department); and the following telegraphists from

the second class to the first class:—Messrs. Mackillop, Croy, M. Campbell, Elder, Howieson; Misses M. Lang and B. Paterson.

MR. WILLIAM MELROSE, late of this office, died at Oban, on January 23rd, after a protracted period of ill-health.

AMATEUR SWIMMING CLUB.—At a meeting held in Drummond's Hotel, on Thursday, January 24th, it was decided to form a swimming-club in connection with this office. Mr. Geo. J. Clark and Mr. J. McFayden were elected president and vice-president respectively. The other office-bearers are:—Captain, W. J. Dickson; vice-captain, J. McGregor; treasurer, G. W. Skakle; secretary, W. L. McDonald; committee, Messrs. Armour, D. McGregor, Littlejohn, A. Stevens, and Malcolm.

HASTINGS.

THE annual dinner of the staff took place at Green's Hotel, Jan. 30, when fifty-five sat down. The chair was taken by Mr. Hulburd, Postmaster, and amongst those present were "eighteen feet of Cook" (viz., Postmasters of Eastbourne and Hawkhurst and G. W. of Surveyors' office), Mr. Councillor Bray, Mr. Avard, chief clerk; Mr. Webb, chief clerk St. Leonards; Mr. Jewitt, late of H M K; and Mr. Mitchell, local R. and A. G. After the remnants had been cleared, "toasting," with the necessary intervals, was continued until 1 A.M. The Queen and Royal Family and the Postmaster-General were received with musical honours. In responding for the Surveyor of S. E. District, proposed by Mr. A. Bray, Mr. Cook, of H.F.S., addressing his "comrades-in-arms," said it was his privilege to return thanks for a man for whom he had the greatest admiration. He thought their Surveyor worthy of the respect paid him. (Cheers.) Mr. Balding, in a lengthy speech, loudly applauded, proposed the health of the Postmaster of Hastings. In returning thanks, Mr. Hulburd said he felt in a difficult position after the flattering (no, no,) remarks of Mr. Balding. He endeavoured to carry on the duties of postmaster with as little "friction" as possible, and was exceedingly glad to meet them on such occasions as the present. He went on to mention the names of several energetic members, making especial allusion to the valuable services of Mr. Avard, his "first lieutenant." In conclusion, he thanked the company heartily for the manner in which his health had been toasted. The remaining toasts were Sub-Postmasters, the Staff, the Ladies, and the Dinner Committee (coupled with name of the hon. sec., Mr. R. R. Duke). The proceedings were enlivened by some capital harmony, the majority of those present having responded to the "music" roll.

LANCASHIRE AND YORKSHIRE RAILWAY.

AS an evidence of the extent to which the railway companies utilise their wires, it may be stated that the total number of telegrams dealt with by this company for the past year amounted to one and a half millions. As a consequence, the circuits are so fully charged with work, that recourse is being had to a codified system of telegrams, such that a single word or a combination of letters shall represent a whole sentence or telegram. It is anticipated that this will considerably relieve the present congested state of things.

We regret to report the death, after a short but severe illness, of telegraph clerk, T. Millington, of Crumshall.

LEEDS.

MISS FOWLER is promoted to the first class, and has gone to Market-street, vice Miss Rushworth, buried—I mean, married. The political talking fever has set in with a vengeance, and we have already had some stiff nights. One evening in the week before Parliament met 35,000 words advised for receipt, and seven-teen special staff men away at other offices.

COMPETITIVE examinations for male and female candidates have been held, but nothing further has been done to prepare for the sixpenny rate.

THE soirée came off on Thursday, Jan. 24, and was a brilliant success. There were about 180 persons present, including a few visitors from other offices. The proceedings commenced with a "Yorkshire Tea," provided by Mr. Wood, an eminent local purveyor. The menu was of a high-class character, and was most elegantly served in the lower hall of the Mechanics' Institute. Mr.

The Hire-Purchase System of Furnishing conducted by NORMAN & STACEY commends itself to all classes. It combines real economy on sound commercial principles, with strictly private arrangements, and is free from all the objectionable formalities which attach to dealers and others. No interest or fees are charged, and payments can extend over 1, 2, or 3 years. The wholesale firms embrace the best manufacturers, who have large stocks for selection, and no additions are made to the ordinary selling prices. Intending purchasers should call or send for particulars.—Offices, 11, Queen Victoria-street, E.C.—[AdvT.]

Trenam, the Superintendent of Leeds, presided, and was supported by Mr. Chambers, the Engineering Superintendent, Mr. J. Naylor, the Senior Inspector of the district, and other well-known officers. After tea, the company adjourned to the Albert Hall, which had been neatly decorated for the occasion, and which, when brilliantly-lighted and filled by the well-dressed audience, presented a most attractive appearance. A really first-rate concert, consisting of glees, songs, &c., was then given by Messrs. Stones, Smith, Harper, Robinson, Butler, and other musical members of the staff, Mr. Dawson, of Dewsbury, contributing greatly to the enjoyment of the audience by his excellent rendering of several songs. At the close of the concert, Mr. Trenam briefly reviewed the changes which had occurred since the first inauguration of these gatherings, and the probable changes which the developments of the coming year were likely to produce. He congratulated the committee on the success of their efforts on that occasion, and proposed a hearty vote of thanks to them, and to the vocalists and others, who had contributed, and were to contribute, to the evening's enjoyment. Mr. Chambers seconded, and it was carried with acclamation. After a brief interval, Mr. Lodge, the M.C. of the occasion, took possession of the floor, and dancing commenced to the strains of a splendid string band, and was kept up with spirit until nearly six o'clock the following morning. Ample provision had been made for refreshment and for amusement of non-dancers. Everybody agrees it was by far the best thing of the kind we have yet attempted. The committee, of which Mr. Whitworth was chairman and Mr. Tuke secretary, have a small balance in hand after paying all expenses; and already there is projected an even more attractive gathering for next year.

LEICESTER.

THE annual dinner of the Leicester Postal Telegraph Staff was held at the Bell Hotel, on Jan. 16, about thirty sitting down. After the usual loyal and patriotic toasts, the Chairman, L. T. G. Turner, Esq. (Postmaster), proposed the health of the Postmaster-General, observing that he was a man from the people, and had raised himself in the face of great disabilities. (Applause.) The Vice-Chairman, Mr. Gibbins (Telegraph Superintendent), next gave the toast of the Postmaster of Leicester, paying a high tribute to the character and good qualities of Mr. Turner. The toast was most enthusiastically received with musical honours, after which Mr. Turner thanked the proposer and the staff for the warm reception they had given him, and remarked that it gave him very great pleasure to mingle with his staff, especially at such social gatherings as the present; but it would have given him greater pleasure to have presided over a gathering of the amalgamated staff. "The Telegraph Service" was next proposed by Mr. Goddard (Assistant Superintendent) in an exhaustive *résumé*, embracing its history from 1837 to the present date. The toast was suitably responded to by Mr. Gibbins and Mr. James Stone, of the engineering department. The other toasts, including "The Town and Trade of Leicester," "Our Benefit Societies," "The Visitors," "The Press, and "The Dinner Committee," having been duly honoured, the rest of the evening was spent in harmony, songs being rendered by Messrs. Frisby, Lippitt, Athorn, R. Dixon, C. Orgill, Weight, and Pearce. The efforts of the vocalists were much appreciated, and the whole of the proceedings passed off in a pleasant and agreeable manner. The chairman was supported by the following local gentlemen:—Francis Hewett, Esq. (ex-Mayor), editor and proprietor of the *Leicester Daily Post*, *Daily Mercury*, and *Weekly Chronicle and Mercury*; Alderman Israel Hart; J. H. Williams, Esq., stockbroker; and Mr. J. Kimber, Chief Postal Clerk. Amongst the visitors were Mr. Park Frisby, C-in-C Midland Railway Telegraphs, St. Pancras, and Mr. E. Pearce, late of Postal Telegraphs at Leicester and Plymouth.

LEITH.

THE "TELEGRAPHIST" has been received with great satisfaction, all the male clerks subscribing bar one. We have, however, hopes of a "convert" in him. Need I state we have found a long-felt want in your ably-conducted magazine? It sheds light into the darkness which has prevailed. At length we know something of our brother clerks throughout the country. It will, no doubt, tend greatly to unite us. Let us hope it will have a long and prosperous career, to the benefit of all. The messengers here, with our junior clerk at their head, have formed a rowing-club, and purchased an excellent boat pulling eight oars. It promises to be a success.

THE Excelsior Debating Society's annual soirée, concert, and ball came off on Thursday last, in the Assembly Rooms, before a crowded house. Messrs. Hay and Mills, of this office, took part in a farce, Mills as a young lady, and Hay as a "masher." Their acting reflected great credit on them, and was thoroughly appreciated. Most of the staff were present. The laughter was brought to a climax (amongst the ladies) when Hay (rather nice-looking)

fell in love with Mills, and kissed "it." We have lately lost Miss Coutts, she having entered the happy state, and gone to reside with her husband, a telegraphist, in the "Granite City."

THE Nelson Cricket Club, of which most of the cricketing portion of our staff are members, promises to be strong this year, among other recruits being Mr. Gracey, a crack shot in the local volunteers and a noted bat.

LIVERPOOL.

A LARGELY attended meeting of the members and friends of the Liverpool Telegraph Clerks' Mutual Aid Society was held at the Clock Hotel on Saturday evening, Feb. 16, for the purpose of presenting a handsome marble timepiece, bearing a suitable inscription, to Mr. L. M. Benson, in recognition of his services as hon. secretary to the above society. Mr. G. H. Wilson occupied the chair, and, in the course of an appropriate speech, referred to the services which Mr. Benson had rendered to the society since its formation eighteen months ago, and to his exertions in bringing the work he had undertaken to the satisfactory position which the balance-sheet for the past year evinced. Mr. Benson briefly responded, thanking the members for their appreciation of his efforts. The remainder of the evening was devoted to music, recitations, &c.—a long and varied programme being ably rendered by the local talent; Messrs. Venables, Crighton, Connell, J. Evans, sen., J. Evans, jun., E. A. Evans, Shea, Laver, Merchant, W. Lewis, Jack, Boyd, Fothergill, C. J. Rodgers, S. E. Steel, Owens, Taylor, and W. T. Williams, being especially noticeable for ability. A vote of thanks to Mr. J. Evans, sen. (late of Chester), for the admirable manner in which the meeting was conducted throughout, and a vote of thanks to the chairman, terminated a most enjoyable evening. The concert was so great a success that it is very probable it will be repeated monthly.

MANCHESTER.

THE following promotions have been announced:—Mr. Sirett, from Asst. Supt. second class, to Asst. Supt. first class; Mr. Monk, from Clerk, to Asst. Supt. second class; Mr. Garnett, from first class Telegraphist to Clerk. The two former gentlemen were, before the transfer of the Telegraphs to the Post-office, in the service of the Electric and International Company, and the latter in the British and Irish Magnetic Company.

EVERY one in Manchester was extremely pleased to hear of the reinstatement of Mr. Heald, who, for ten months, had been reduced in position and pay for making certain statements at a meeting of the staff which the Postmaster-General deemed to be misleading.

It may be interesting to some of the old Electric hands to know that S. Scrace and W. White, the old M.R. mechanics, have retired upon pensions, which we hope they will long enjoy.

TECHNICAL INSTRUCTION.—A class of about thirty is held at the Technical School for Instruction in Telegraphy, Mr. John Martin (Medallist in Honours), of the Engineering Branch, being the lecturer. The attendances are well kept up, and the class promises excellent results. Last year 97 per cent. of those who sat passed the City and Guilds Examination, three being classed first honours.

TESTIMONIAL TO MR. JOHN WRIGHT.—An interesting event took place at the Post-office on the 11th inst., when Mr. John Wright, a stamper, was presented with a testimonial on the occasion of his retirement on a pension, after 34 years service. The testimonial consisted of a very handsome marble time-piece, an illuminated address, and a purse of money. The esteem in which Mr. Wright is held by his brother officers of all grades was shown by the fact that nearly 400 subscribed to the testimonial, and the meeting at which the presentation was made was one of the largest of the kind ever held in the office. Mr. Constable, Assistant-Superintendent (Postal Department) who occupied the chair, made the presentation, and referred in a kindly manner to his personal knowledge of Mr. Wright's official career during the past 28 years. Mr. Eldershaw warmly congratulated Mr. Wright on the circumstances of his retirement. Mr. Bagley also joined in the congratulations, and in the course of his remarks drew attention to the possibility of a public servant being a good officer, and at the same time earning the good-will of his fellow-workers. Mr. Clift, speaking on behalf of the Telegraph Staff, said that Mr. Wright, whilst officiating as lodge-keeper, had won the respect of all his fellow-officers in that

CAUTION TO LADIES AND GENTLEMEN who think of entering the Telegraph Service. Never pay for instruction in Telegraphy before you have inspected the system and seen the instruments you will have to work. Beware of clap-trap advertisements emanating from Amateurs. The WEST LONDON SCHOOLS OF TELEGRAPHY, 101, Uxbridge-road, W., are always open to the inspection of the public, and pupils are received on trial.—[ADVT.]

department. After Mr. Wright had expressed his thanks, the proceedings, which were thoroughly hearty, terminated with a vote of thanks to the Chairman.

ELECTRIC HARRIER CLUB.—Since the formation of the club the members have met on several occasions, and those who have taken part seem to have thoroughly enjoyed racing through the cross country. On the 12th, breaking away from the Crown Inn, Long-sight, the track was laid through the pleasant locality of Birch, past Withington Skating Rink to Didsbury. Leaving Cheadle on the right, the hares (Messrs. Crosby and Hemmings) made for Heaton Mersey, and, doubling round, returned by way of Levenshulme and Slade-lane. The distance covered was about ten miles, the time taken by the hares being one hour, ten minutes, and by the hounds one hour, twenty minutes. For a short time the hounds lost the trail, the high wind having blown it away.

EXTRAORDINARY CLAIM FOR COMPENSATION.—FACTS!—A telegraph wire (to a local post-office in Manchester) upon a chimney. Storm takes place. Chimney-pot is blown off. Owner says caused by the wire, and adduces evidence in support of this as follows:—"At one time the local P.O. only sent so many messages per day, now they send three or four times as many, and it must shake the chimney more." "Good gracious!"

WEDDINGS.—On February 11 a wedding took place at the Wesleyan Chapel, George-street, Hulme, when the Rev. J. J. Sargeant united Mr. Thomas Hayos to Miss Eleanor Jenkinson. Mr. Hayos has for several years occupied the position of schoolmaster at MR, many of the present junior staff of both sexes having been taught to send and receive by that gentleman. The bride was elegantly attired in brown silk, and together with the bridesmaids, who were artistically arrayed corresponding to the variety of costumes, looked lovely. The happy bridegroom bore his bride away to Southport to enjoy the honeymoon, where our best wishes now leave them.

MR. WORSLEY, too, has been united to Miss Alice Howarth, of Blackpool. The ceremony took place on January 30 at St. Chrysostom's, Victoria-park, Manchester; also Mr. Geo. Priestnall (our lively friend "Bogie") entered the "holy ties" on the 10th inst. with Miss Annie Elizabeth Pryce, of Kerry, Montgomeryshire. The ceremony took place at St. Margaret's, Whalley Range, Manchester. We are unable to furnish details of either ceremony, but in wishing them "Health, wealth, and happiness" we feel sure that we echo the wish of the whole staff.

NEWCASTLE-ON-TYNE.

POSTAL TELEGRAPH DORCAS CLUB.—This club, which was established about four years ago to provide destitute children with comfortable garments, has just issued its quarterly report, which not only reflects credit upon its members, but is most encouraging to others to endeavour to promote similar clubs throughout the service. By a weekly contribution of a penny (from either male or female clerks) materials are purchased and made up by the female clerks, and given to any destitute children who are recommended by any member of the club. During the past quarter, twenty children have been supplied with necessary clothing. The contributions amount to £4. 5s. 5d., for the quarter, and exceed those of the corresponding quarter of last year by £2. 2s. 10d. If any of our readers feel inclined to adopt this useful method of helping their poor neighbours, the President (Miss Hiscok) will gladly give any further information respecting its working.

The annual dinner of the Postal Telegraph Cricket Club was held on Saturday evening, Feb. 2, at the Nag's Head Inn, Mr. J. W. Taylor, the President of the Club, in the chair, Mr. W. Curry in the vice-chair. Dr. Armson, the medical officer for the Department, one of the patrons of the Club, was present, the other patron, Mr. P. J. Mosley, the Telegraph Superintendent, being unable to attend. After dinner, the annual report was read by the treasurer. The Chairman then presented to Mr. Younghusband, the highest average scorer for the season, a prize bat given by Mr. Mosley. The healths of the Queen and Royal Family were drunk, and a verse of the National Anthem sung by the company, followed by the toasts of the Postmaster-General, the Postmaster of Newcastle-on-Tyne, the Telegraph Superintendent and Medical Officer. In proposing "Success to the Telegraph Service," Mr. J. H. Clarkson gave a brief sketch of the progress of electricity and magnetism, mentioning the various discoveries which led eventually to attempts to communicate by means of these agencies, such as the proposal to make use of twenty-four wires to actuate twenty-four needles, the five needle and the double needle. After struggling with adverse circumstances for a few years, Professor Wheatstone made electrical communication a success. After this Professor Morse introduced the Morse Printer, which was immediately looked upon with great satisfaction by the directors of the telegraph company. Amongst the improvements which followed were the Bain, and the Bright's Bell. The

next step of importance was Sir Charles Wheatstone's Automatic instrument, which may be worked at rates varying from 20 to 200 words per minute. Mr. Clarkson then went on to mention the later improvements in telegraphy, particularly the Duplex and Quadruplex. He then referred to the advances made since the telegraphs had been taken over by the Government, showing in what large proportions the staff had been increased, and said should the introduction of the 6d. rate prove the success it was expected to be, the staff would, in all probability, have still further to be largely augmented. The Telegraph Service, he said, had been looked upon six or seven years ago as the very bottom of the Civil Service, but should it prosper as it has done in the past year or two, it would soon occupy the premier position in the Civil Service. Mr. Winter, in a neat speech, proposed success to the Postal Telegraph Cricket Club, after which a most enjoyable evening was spent, Messrs. Forster, Andrews, Bullock, and Younghusband contributing instrumental music, and Messrs. Errington, Andrews, Jefferson, McCulloch, and Weddell providing the vocal music. The rendering of the "Bay of Biscay" and the "Maid of Athens" by Mr. Errington being loudly applauded. The "Keel Row," with variations for the flute by Mr. J. C. Forster, was also a great success. The usual votes of thanks to the Chairman, &c., brought the proceedings to a close.

PORTSMOUTH.

The United Telephone Company are extending their system gradually in this town, and are endeavouring to obtain a licence for the establishment of an Exchange. This is, however, at present withheld by the Postmaster General, who, it is thought, has an idea of opening a Postal Exchange. Some comment has been made by those interested in the scheme; but it is a question whether the companies are not by degrees infringing upon the rights of the Government under the Telegraphs Act, for although the Exchange system may not mean the actual transmission of public messages, in so many words, it certainly renders the sending of public messages unnecessary.

The idea of the proprietors of this journal in establishing a competition for the best "senders" deserves to meet with success, and gives form to an idea of my own some years ago, when the Queen's Speech used to be looked upon as a test of speed, although I fear not one of perfect sending—for I remember having to guess the greater portion of a speech, the hieroglyphics of which reminded one of nothing so much as the antiquarian inscription which so puzzled Mr. Pickwick and his friends. This was at the time that Mr. Scudamore used to stand upon a stool and give the signal to start by throwing down his hat! Should the competition become an annual event, there are sure to be many aspiring youths working up their "keying," in anticipation of winning renown.

There appears to be great activity in filling up sorting-clerk and telegraph learnerships—both in large and small offices; and with it comes additional bother in the form of errors and trivial reports for irregular remarks. At least, this is our experience, and it is odd if we are an exception. The poor little d—, I beg pardon, would-be sorting clerks and telegraphists, are expected to undertake enough for their money. Little wonder need be expressed if they fail to comply with the requirements of the Department, and become neither one thing nor the other with any credit to themselves or their instructors.

STOCKTON-ON-TEES.

THE TELEGRAPHIST has been received here very well, as it deserves to be everywhere, for its merits. It fills up a long-felt want in supplying the many members of the different Telegraph Services and the Postal Service with something light and instructive wherewith to occupy their few spare moments.

MR. WILLIAM BROWN, of the Post-office here (late of Hull), took unto himself a wife a short time ago, and, to honour the occasion, members of both of the staffs presented him with a marble time-piece, suitably inscribed.

MR. J. T. BLENCH has been appointed sorting-clerk and telegraph learner at this office.

OUR staff and apparatus is to be considerably augmented to meet the expected increase of work consequent on the reduced tariff on Oct. 1 of the current year.

YORK.

WE have much pleasure in announcing that Mr. John A. Weatherill, of this office, has been appointed to a relay clerkship at Haverfordwest. Mr. Weatherill entered the service in May, 1865, and after considerable peregrinations amongst various stations of the "Electric and International," was transferred to York in 1871, where he had the bad luck to wait at the maximum of the old third class for eight years. He was, however, promoted to the first class at the last revision. Before leaving, his fellow-clerks presented

him with a copy of "Culley's Handbook," and an illuminated address expressive of the esteem and respect in which he was held. Mr. Wardle made the presentation in fitting terms, and Mr. Weatherill suitably replied. The address was the work of Mr. J. E. Morton, of YO, and was executed with his characteristic ability. An address was also presented to Mr. Weatherill by the members of a shooting team belonging to the York Rifle Volunteers, in which corps he held the rank of corporal.

MR. A. E. MITCHELL, of Ventnor, Isle of Wight, and Mr. J. H. Weaver, of Doncaster, have been attached to the telegraph staff here.

RAPID progress is being made with the new Post-office, in which the combined services of the postal, telegraphic, and parcels post branches will be carried on; and it is thought that by August goodbye will have been said to old "YO." The new instrument-room will be about double the size of the present one, and those who are acquainted with it will have some idea how the change will be appreciated.

THE secretary of the cricket club will be glad to arrange matches for the coming season with offices within easy distance of York.

Colonial Items.

SOUTH AFRICA.

A LINE or two from this part of the world may not come amiss as tending to show the interest excited by the re-appearance of an organ devoted exclusively to the several Telegraph Services. Interest, shown in a practical manner by becoming subscribers, has been evinced not only by representatives of the NT and HF offices, but also by our colonial-born clerks of both English and Dutch extraction. The December number—which, by the way, was the first intimation we had of the appearance of the TELEGRAPHIST—has been very favourably received here, and we are all on the lookout for No. 2.

CHRISTMAS, 1883, has come and gone! The weather was "quite too awful." Instead of being baked, as we were last Christmas, we were nearly washed away by two days' almost continuous rain. This was the very reverse of pleasant, for fine weather is absolutely necessary to make a holiday here at all supportable.

At present we are "quite out" of the snake stories that crop up now and then, but will send you an account of the very next adventure. Perhaps you would like the snake-skin to be attached as a proof of the veracity of the story, *à la* Sivewright — — — — —.

L. Y.

Cable Companies.

INDO-EUROPEAN TELEGRAPH STATION, TIFLIS, CAUCASUS, JAN. 21, 1884.—On the morning of the 18th inst. (shortly after the ceremony of blessing the waters, which took place at noon) a distinct shock of earthquake was felt here; no damage, however, as far as can be ascertained, has occurred. A similar shock happened about two years ago, when the foundations of a bridge which crosses the river Koorra were shaken; consequently traffic proceeds at a footpace. Wishing the TELEGRAPHIST every possible success.

CENTRAL AND SOUTH AMERICAN TELEGRAPH COMPANY.—Mr. McCarthy, from the Anglo-American Co.'s Valentia station, has joined this company at Panama.

WESTERN AND BRAZILIAN TELEGRAPH COMPANY.—Mr. D. Herbert has left Valentia to join this company at Rio de Janeiro.

MEXICAN TELEGRAPH COMPANY.—Mr. George Butcher, from the Anglo Co. at Valentia, sailed on Feb. 20 to fill an appointment at this company's Vera Cruz station.

NEW ATLANTIC CABLE COMPANY ("The Commercial Cable Company").—Messrs. Siemens Brothers' steamer *Faraday* left London early last month to commence laying the first of the two cables which are being manufactured by them for James Gordon Bennett, Esq., of the *New York Herald*, and J. W. Mackay, Esq., of Nevada fame. The cables are to be laid in two sections—the route being from Ballinskelligs Bay, Ireland, to Dover Bay, Nova Scotia, thence to Cape Ann, Massachusetts. The *Faraday* will commence operations at Cape Ann, and, after finishing the short section, will lay a portion of the main cable and return to England for the remainder. It is expected that the first cable will be opened for traffic by the 1st of July, and the second towards the end of August. It is stated that on completion of the first cable Mr. Bennett intends publishing the *New York Herald* in London daily. The cables are to be duplexed on the Muirhead system. In connection with the above

Cable Company, the *Daily News* of Feb. 13, in its New York money market report, makes the following announcement:—"Mr. Ward, the general superintendent of the Direct United States Cable Company since its organisation ten years ago, has resigned to take a like position on the Bennett-Mackay cable. Mr. Ward is extremely popular here, and highly regarded both for his honesty and his ability."

Correspondence.

NOTICE TO CORRESPONDENTS.

The Editor declines to publish any letters containing abuse or personalities. The name and address of the writer must be enclosed, not for the purpose of publication, but as a guarantee of good faith.

Correspondence invited from English and Colonial Telegraph Clerks. Contributions for the March number must reach the Editor before February 15.

THE SIXPENNY TARIFF.

To the Editor of the TELEGRAPHIST.

SIR,—In view of the anticipated reduction of tariff and consequent increase of messages, I beg to throw out a hint to the authorities, which I believe would be of great benefit on Wheatstone circuits. It is obvious that much time is occupied in translating transmitted messages, and I venture to suggest that, following the plan of the Cable Companies in gumming the Morse slip on the "B" forms, instead of, as at present, "writing up," would be attended with great profit both to the Department and public.

The advantages would be expediency, accuracy, and economy.

First, a slip could easily be drawn across a damper revolving on a drum filled with gum.

2nd. The errors arising from translating would be entirely removed.

3rd. The lowest grade of the staff could be used to do the work, and the slip by this plan would be preserved.

Of course, one or two rules would have to be adopted.

The X messages could be punched on one slip.

The punchers could be required to count messages before sending them, and be held responsible for miscoups.

Taking into consideration that messages have always to pass through experienced hands, no great difficulty or confusion could follow the adoption of this suggestion.—Yours, PROVINCES.

MR, Feb. 11, 1884.

[Several letters are unavoidably held over.]

Answers to Correspondents.

LETTERS received from W. M. BRADY, ONE FROM THE BS CENTRE, W. S. O'H, ANOTHER JUNIOR, YEMACKO, BOY (written on both sides of the paper), L. V. JUNIOR, PROVINCIAL, AN OUT-STATION, UNISON, JOHN HAMPDEN, A SUB-TELEGRAPHIST, TECHNICAL KNOWLEDGE, SPIDER, and many others, crowded out for want of space.—The following contributions will be returned on receipt of postage:—"Old Friends," "Pages from my Diary," "A Visit to Seville," "Life in the Telegraph Service," "An Ode to Spring," "Lost in the Bush," "Peculiarities that constitute Character," "A Dull Country Office" (there is no point in your so-called story), "Parody on Chatting on the Wire" (you have no idea of rhythm; try prose next time), "Lost Opportunities" (first appeared in the *St. Martin's Magazine*; it was reprinted in our No. 2, and you have the unblushing effrontery to send it in as an original production), T. QUINN (regret we have no space for telegraphic curiosities, but we shall preserve your contribution. All letters expressing dissatisfaction at the result of the competition will find their way to the waste-paper basket.

BIRTH.—On Jan. 15, the wife of David Cuthbert, D.U.S. Cable Company, Ballinskelligs, of a daughter.

ELECTRICAL ENGINEERING.—Wanted young gentlemen to qualify for the profession of Electrical Engineering at the WEST LONDON SCHOOLS OF TELEGRAPHY AND ELECTRICAL ENGINEERING, 101, Uxbridge-road, W. VACANCIES FOR APPRENTICES to learn the trade of Electrical Instrument Maker. Apply to the Principals.—[ADVT.]

The Telegraphist

A MONTHLY JOURNAL FOR

Postal, Telephone, Cable, and Railway Telegraph Clerks.

LONDON: TUESDAY, APRIL 1, 1884.

Prize Sketch.

No. 4.—THE RUSSIAN TELEGRAPHIST.

BY ODIN.

IT has not infrequently occurred to the writer, in observing the performances of various Continental operators, that the English telegraphist, who is *facile princeps* the most expert manipulator of the European systems, would be none the less interested in his profession, less conscious in his own powers, or less satisfied with his own status, by comparison with his neighbours. I venture to think, therefore, that it may not prove an entirely uninteresting theme to the readers of the TELEGRAPHIST if an occasional sketch appear in these columns descriptive of the status and general personnel of some of our Continental confrères. This latter term, however, may appear to the non-professional, or even to the conservative professional reader, somewhat incongruous, but if he, or she, pause for a moment to consider in how direct and close an intercourse the international systems of land and submarine telegraphy are at the present day connected, it will be readily acknowledged that we have no frontiers; we know no barriers. The elements or belligerent nations alone may temporarily and locally interrupt the lightning thread of our communications. Frontiers, seas, oceans, continents, and even the hemispheres are bridged by the ever-spreading labyrinthian web of our united systems! We are, therefore, strictly within the meaning of the term in speaking of our Continental confrères, whether they dwell on the banks of the Neva or at the Antipodes. Indeed, if we may go further and designate ourselves one grand fraternity, assuredly no profession in the world's economy can lay claim to the unique character of the links which bind us. A railway system may cover a continent—the telegraph embraces the civilised globe!

I am of opinion, therefore, that we should manifest some little kindly interest in a closer acquaintance with the manners, customs, and routine of our neighbours. Permit me, then, to introduce to the reader our Slavonic confrère, whom we shall suppose, *par exemple*, is a first-class or senior telegraphist. He is martial in uniform and, more or less, in bearing. His handsome military costume would lead one, at first sight, to mistake him for an officer of a Line regiment. He wears a rapier or dress-sword, with gay sword-knot, epaulettes and spurs, although he possess no horse, and is, probably, innocent of the first rudiments of equitation. But the spurs are *de rigueur*, and the outward stamp of his grade, or *tchin*. He is a person of good or fair education, more especially as a linguist; of good address, pleasant manners, and obliging disposition. His subordinates must salute him according to military etiquette. The ears of this imposing personage, however, have not always been accustomed to the jingling music at his heels, and we shall therefore take a glance at his career *ab initio*. There are four classes or grades alike in all Russian stations, but it is for the first or second class that the young aspirant generally enters, and for which he must pass an examina-

tion. In this respect the procedure is entirely different from the English, as the candidate must at the outset declare for which class he elects, and the examination consequently differs in degree of severity. But these examination tests, which on the regulation papers appear sufficiently rigorous, are, as a matter of fact, very considerably relaxed. Candidates are, of course, occasionally plucked and relegated to an inferior class, but not frequently; and it must be borne in mind that nepotism is always and everywhere prevalent in every branch of the Russian civil service. Our first-class candidate having successfully passed this easily-reached goal, and having become proficient as an operator, receives a salary of 35 roubles (about £3. 10s.) per month. From this stage there is no fixed yearly increment. He takes his chance haphazard of reaching the maximum salary of 65 roubles (£6. 10s.) per month—certainly not a very handsome income; but to this income there are, comparatively speaking, very considerable extras within his reach, chief of which is a knowledge of the English language. When proficient in English the first-class telegraphist receives a permanent addition to his salary of 300 roubles (£30) per annum, which raises his monthly income to 90 roubles (£9). When proficient as a Hughes operator he receives a further addition of 12½ roubles (25s.) per month (in the second class 8 roubles, or 16s.). Thus, the maximum salary, including permanent extras, is reached at 102 roubles 50 copecks, or about £10. 5s. per month. Our Slavonic friend may speak several foreign tongues of Western Europe, but if they do not include English the additional salary is withheld; or, knowing English and in receipt of this extra, he may add any number of foreign languages to his repertoire without further increasing his income. It will be seen, then, that for this extra-salaried, linguistic acquisition, English is a *sine quâ non*. There are certainly degrees of proficiency among our English-speaking Russian confrères, and very amusing degrees. Let us say, however, it is for want of the practice which makes perfect, and not uncharitably suspect the examiners of receiving *douceurs*.

I have, so far, spoken only of the first-class telegraphist, whose class is naturally the less numerous of the two, and without further particularising the gradual progress of the inferior classes, it is only necessary to add that the greater number of working telegraphists receive an average salary of 45 roubles per month. In all grades a full pension is granted only after thirty-five years' service, and half-pension on the completion of twenty-five years. The full pension rarely exceeds 25 roubles (50s.) per month. In this respect the ladies fare somewhat better, as they are entitled to half-pension after fifteen, and full pension after twenty years' service; and if widows, and in case of death, the pension is continued to the children during minority. The best prospect for the young telegraphist in the Russian service is offered by the sections of Eastern and Western Siberia and the district of the Amoor—preferably the latter. After five years' service in any of these sections (and the climates are the finest in the empire) he may return with a considerable permanent addition to his salary, may choose his own station, and enjoys various other privileges. If, however, he remain ten years, he may retire on a pension of 50 roubles (£5) per month, half of which sum, to which he was entitled after completing his first quinquennium, being paid in addition to his salary during the latter.

Let us now take a glance at our confrère in the instrument-room. The station under our immediate notice I may rank as the third or fourth largest commercial centre in the Empire. The staff numbers some 120, of whom about 20 are ladies. For the information of my lady

readers, I may here add that their Russian sisters until recently, and more generally at the smaller stations, also wore uniform. The last time I saw a lady so costumed was in Poland. The jacket was of a semi-Hussar pattern, prettily braided, and profuse in bright buttons; the skirt rather close-fitting and kilted. But I am not happy at catching all the points and patterns of a lady's costume at a single *coup d'œil*, so I must beg the fair reader to excuse a more detailed description; I certainly forget all about the lady's head-dress, and cannot say whether her hair were braided to a uniform style. The appointment of the instrument-room is excellent. The systems in operation are Morse and Hughes, but on some of the trunk lines, Wheatstone is, I believe, gradually being introduced. It is a little curious at first in glancing along the instrument-tables to note the bright silvered buttons of the uniforms and epauletted shoulders, here and there relieved by the elaborate *coiffure* of a fair *télégraphiste*. The most striking feature, however, to one accustomed to English routine is the absence of all apparent hurry and clatter, if we except the clatter of the spurred heels of the controllers. A closer observation, I am sorry to record, does not prove this to be the much desired quietness with expedition; the latter is an absent quantity, not yet appreciated by the nonchalant Muscovite. Here is a young gentleman leisurely rolling a cigarette whilst his instrument calls, and a pile of messages before him bearing some thirty hours' delay. He consoles himself, no doubt, with the reflection that he will be off duty in a couple of hours, and will bequeath the pile to his successor; and is indifferent whether his successor prove equally generous on the morrow. Incredible as it may appear, I have known messages frequently to occupy forty-five minutes in manual transit between counter and instrument, and this, too, in a city of first-class mercantile importance. As to manipulatory expertness, twenty-seven messages an hour, of an average of twenty words per message, is considered good working. Thirty-five messages is considered an extraordinary performance—or, say, nine to eleven words per minute. It will be seen, therefore, that the laurels of the English telegraphist are not likely to be carried off by his Russian *confrère*. Fines are never imposed for errors, but in flagrant cases extra or, in official phraseology, "disciplinary" duty is exacted. In cases of insubordination, however, the chief of a station is possessed of very drastic powers. He may order a clerk under arrest for a certain number of days. I have known several instances which occurred in a certain station on the littoral of the Euxine, where a refractory member of the staff has been sent under a military escort to the guard-room of a battery three miles distant. If among the readers of this paper there are some of my old Manchester friends with whom I was associated twelve years ago in a movement which at the time very considerably exercised Mr. Scudamore, I trust they will see that it were worse than useless to point out to our Russian *confrères* the unqualified advantages of organisation and resistance! But to return to the instrument-room, here is another young gentleman seated at an isolated table laboriously receiving by the uncertain light of no less than three petroleum lamps. Now, the reader will probably perceive nothing extraordinary in this obscure fact, but a very few words will suffice to show that this apparently trivial circumstance illustrates a very ugly feature in the Russian system. The chief of a station receives from the administration fixed amounts for stationery, fuel, light, &c., and these amounts are by no means stinted; but the disbursements at the hands of the chief are entirely unchecked. The meaning, then, of the failure of the united illumination of the three lamps in question to supply the operator with

sufficiently brilliant light, is obvious; the difference in the prices of good and inferior petroleum goes to the personal emolument of the chief. Similarly, the Russian telegraphist, with a wife and family to support, and who finds it necessary to be canny with his copecks, prefers occasionally to purchase pencil and pens at his own cost rather than apply for them to his chief. It must not, however, be understood that this essentially Russian mode of manipulating the disbursements of departmental funds to the petty aggrandisement of the disburser, is peculiar to the telegraph service; or even that the chief, from his training and surroundings, has a remote idea that he is exceeding the limits of his legitimate powers. Under the ægis of St. Martin's, a different construction would, of course, be put upon such a system!

To pursue further the subject of this paper would, I fear, be a trespass on the limited space of these columns. I would, however, in conclusion, suggest to our amiable Editor that an editorial invitation to English telegraphists abroad might elicit an occasional sketch of various foreign types of our *collaborateurs* which should prove alike interesting to the home and colonial reader of the TELEGRAPHIST.

THE PROPOSED SOCIETY OF SCIENTIFIC TELEGRAPHISTS.

ALL our readers will doubtless recollect the nature of our offer in reference to the proposed Society of Scientific Telegraphists. Briefly, we agreed to give the use of two large rooms and a valuable stock of apparatus. The offer was duly appreciated by a number of provincial telegraphists, who consented to join at once and pay the fee proposed by us last month. But a gentleman at T.S. called a meeting, and here is the ultimatum:—

1. That the meeting did not think it desirable to start a society to which district or provincial clerks would be eligible.
2. The offer of the instrument rooms and apparatus was declined, the committee deciding in favour of a room at T.S.
3. The meeting decided to start the society amongst the T.S. staff only.
4. That the annual fee be 2s. 6d.!!!!!!

Our object in proposing a Society of Scientific Telegraphists was to enable operators of a scientific turn of mind to practice the use of instruments they have only seen pictured in the text-books, and to aid them in developing original ideas, and, if necessary, putting them into practice. We never conceived the selfish notion of shutting out provincial clerks. At a time when the whole direction of the public mind is opposed to cliques, close boroughs, and narrow underhand proceedings among the body politic, it is not our desire to help or advance anything of a like nature; and we are surprised and disgusted at the result of the meeting. We do not intend to make any further comment beyond the fact that we decline to publish the proceedings of, or recognise, a "Society" formed on such a selfish and egotistical basis. We are not anxious to excite the ridicule of existing societies, nor take part in any kind of burlesque.

A QUICK PUPIL.—Miss Eliza Loder, of Fair Meadow, Maidstone, who entered the West London Schools of Telegraphy on Feb. 11, successfully passed her examination on Saturday, March 22. After only six weeks' practice on the Souder instrument she read and wrote, without a single error, 100 words sent from a book, in five minutes. Miss Loder will be the first lady to receive the half-guinea prize offered by the principals to pupils who read and write twenty words a minute within three months. We shall be glad to know if there are many in the service who attained that speed in so short a period as six weeks.

A SINGLE-NEEDLE CONTEST.

DISTRICT and Railway Telegraphists have appealed to us in favour of a Single-Needle contest. They say: "You have made a grand fuss over the Morse clerks, but you have not thought of bringing us to the fore. What have we done, to be left out in the cold? Won't you give us a chance? Are we to be shut out of these stimulating competitions you are establishing in this country simply because we have never had an opportunity of working the Morse key?" We have carefully considered the matter, and we are disposed to say: "Yes; you shall have an opportunity of displaying your skill, and we are disposed to offer a prize to the best Needle clerk;" but a date cannot be fixed until it is determined how the prize is to be awarded. In our opinion—and we know something about needle instruments, both double and single—the lady or gentleman who can read "G" two or three hundred words from a newspaper, without an orthographical error and in the shortest time, ought to be considered the best clerk.

There is, however, a difficulty about the "sending." The automatic needle transmitter has not been invented, and we are afraid that one sender would soon tire; and some clerks might think that they could have read faster if they had had a quicker transmitter. Now, how are we to get over this difficulty? We think this question will puzzle the ingenuity of the clerks who are in favour of a Single-Needle contest.

We have heard that the Metropolitan section at T.S. is full of good needle clerks, and we know that some of our L.N.W. and Midland friends can read from the bottom of the needle writing the D B's and D L's with accuracy at the same time. We shall be glad to receive suggestions on this subject from needle telegraphists. The main points to be considered are:—

1. How the prize is to be awarded.
2. The rules to be observed.
3. What will entail disqualification.

Of course the competition will be held (probably in May) at the West London Schools of Telegraphy, 101, Uxbridge-road, London, W., in presence of competent judges and the representatives of the press. We will undertake to find pedal and drop-handle instruments of the very best quality, and the winner will be publicly noticed. We shall not settle the nature of the prize just yet. A lady might be at the head of the poll, and our knowledge of the fair sex leads us to believe that brooches, bracelets, and ear-rings would be far more acceptable than a cup or "pot," as the Glasgow churl was pleased to name the prize carried off by the Champion Morse-transmitter.

One word of caution is absolutely necessary. Clerks who make up their minds to go in for this competition must thoroughly understand the rules and agree to abide by them. And braggarts who are sure of winning the prize before they compete are respectfully requested to keep away altogether. We want no more snarling. Recollect that there can be only one winner, and if there are fifty competitors forty-nine will be "out of it." This proposed competition is no more an advertising dodge than the first contest. We are merely acting as the mouthpiece of a number of Needle clerks who want a chance of testing their skill; and we are willing to spend money and do our best to bring the contest to a successful issue.

Telegraphists will oblige by sending in their suggestions without delay, and stating the nature of the prize they would like us to offer.

Country representatives will, we feel sure, be able to obtain passes to London through their superintendents, so that the expenses of their trip may be reduced to a minimum.

THE SOCIETY OF TELEGRAPH ENGINEERS.

A TRAIN-LIGHTING EXPERIMENT.

THE recent trial on the District Railway between High-street, Kensington, and Putney was the subject of Mr. W. H. Massey's paper read at the meeting of the Society, on Thursday, March 13. Professor W. G. Adams, President, in the chair.

The experiment proved that the cost of producing the light was 30 per cent. less than that of gas lighting. The dynamo used was a Siemens' 100 lamp machine, driven by a 7-horse-power Willan's engine. Fifty-two lamps were actually employed, the engine working at 120 lb. steam pressure. The conducting cables were carried in a wooden troughing along the roofs of the carriages, and were permanently joined, as the carriages were never uncoupled.

There were three lamps in each first-class carriage, one in each third-class carriage, and twenty lamps in the van. The head and tail lamps of the train were also electrically lighted. When the

Secretary had finished reading Mr. Massey's paper, Mr. W. H. Preece rose, and, with calm though biting satire, commented on the heap of technicalities with which Mr. Massey had loaded his paper. Mr. Preece is, we know, a populariser of science, and an opponent of the dry-as-dust school, and his thrusts at Mr. Massey's technical jargon were highly relished by the members present.

The eminent electrician did not approve of the system under consideration, and he very sensibly remarked that, to light up a composite train without incurring intervals of darkness, each section of the train would have to be considered as a separate unit requiring a special van, engine, and dynamo. Mr. Preece said that secondary batteries had not proved successful; and that statement reminded us of Sir William Thompson's startling letter to the *Times*, and the story of that wonderful "box of electricity," containing goodness only knows how many foot pounds of stored-up energy (not a word was said about the energy in coal) which had been sent from Paris to Glasgow. We thought of Planté, who was working at the secondary battery twenty years previously, and how Faure snuffed him out for the time with his modification. Then the scene changed to Fleet-street, and we saw in our mind's eye scores of journalists catching at the tempting bait, distorting scientific facts, and preparing their *bonnes bouches* for the gullible British public.

Accumulators, or boxes of electricity as they were called, were to be delivered daily at private houses like so much milk, and domestic electric lighting was announced as *un fait accompli*. An army of speculators next approved, and the public fought for allotments of shares. A prophet arose in their midst, one Mattieu Williams, a distinguished scientist, and, taking for his text the word "Electromania," delivered his jeremiads in plain Saxon English; these warnings were published in the columns of *Knowledge*, but no one heeded them. The brokers had it all their own way, and seventeen millions sterling went—where! oh, where? All this flashed through our brain as Mr. Preece boldly stated that the secondary battery was not a success!!!

The next speaker was Mr. Gammon, who, after admitting that he was neither a telegraph engineer nor an electrician, spoke in glowing terms of Holmes and Burke's primary battery system, which was being used on the L. and S.W.R. Mr. Shoolbred referred to the lighting of a train by means of secondary batteries on the L.B. and S.C.R., and Mr. Langdon described an experiment with the Holmes and Burke battery on the Midland Railway.

Mr. A. Siemens, who spoke with a delightful Teutonic accent, implied that the primary battery was all gammon. He thought that the idea of obtaining economical results from primary batteries had been exploded long ago. In his opinion the only successful method of lighting up trains by electricity was by means of a dynamo fixed on the locomotive.

Mr. Crompton thought that few passengers on a long journey would object to being left in the dark for a short time while the engines were changed; but Mr. Collett, who jumped to his feet, and vigorously attacked Mr. Preece on the subject of secondary batteries, said that the ladies would object to be left in the dark even for a short time, and with bad taste referred to a certain gallant officer who is now expiating an act of folly committed some years ago. We think that Mr. Collett might have got his laugh without alluding to the man who has been so severely punished for his indiscretion, particularly at a time when the press and public are almost demanding his reinstatement.

Colonel Baker has fully expiated his offence, and, if we refrain from raking up the misdeeds of the common felon when he has paid the penalty and purged himself of his crime, ought we not to have the same consideration for a fallen gentleman, who has patiently borne his disgrace, proved his penitence, and startled the country with his deeds of heroism, instead of dragging his name and offence before a public meeting for the sake of producing a momentary effect and raising a laugh?

Professor Forbes described an experiment at Munich, and Mr. C. E. Spagnoletti did not think Mr. Massey's system practicable on such a railway as the Great Western, and concluded that the only possible way of lighting trains by electricity was by means of accumulators placed under the seats of the carriages.

The meeting then adjourned. Among the company present we noticed Mr. E. Graves, the Engineer-in-Chief of the Postal Telegraphs, and several gentlemen connected with railway companies.

THE system of training pupils at the WEST LONDON SCHOOLS OF TELEGRAPHY is based on the Government plan. Learners are not only taught to manipulate the Sounder, Printer, and Needle Instruments; they are thoroughly initiated in the duties of a Telegraph Office. The nervousness consequent on taking charge of a circuit is reduced to a minimum by the perfect system of training at these Schools. Send for a Prospectus to the PRINCIPALS, 101, Uxbridge-road, London, W.—[ADVT.]

RECOLLECTIONS OF A GRIZZLY GRINDER.

"WHO takes for Normanton?" asked a check-boy at my elbow this morning. Not know Normanton? Shade of the immortal Culley, how are the mighty fallen! Thirty-five years ago NO was the great transmitting station of the North of England and the nursery of a generation of grinders, some of whom have distinguished themselves in the electrical world. Many have already joined the majority, and a few,

Neglected and oppressed,
Wish to be with them at rest.

At the time of which I write, NO was one of the few offices always open, and it was the practice to take "news" for York and other offices closed for the night and send it on by the mail trains to its destination, where it was met by the newspaper people who subscribed for it. The flimsy copies of this transmitted news were not sent up to the Clearing House, but were stored on the top of an old closet, where they were easily available as missiles in the skirmishing with which we, from time to time, relieved the tedium of our night watch.

Those of our readers who knew the old NO office will remember its imperfect ventilation, and the necessity of keeping the windows open during summer nights, and will readily understand the mishap I am about to describe. During one of our battles, when the ammunition was flying fast and furiously, a parcel went out of the window unobserved, and alighted in the guard's van of the "down" mail, on the opposite side of the platform, just as the train started.

The guard, supposing it to be the usual parcel, which we had been too late to deliver to him in the ordinary way, picked it up, and in due course handed it to the waiting messenger at the York station. The hour of going to press being close at hand, its contents were hurriedly "set up" and the form locked, without much sub-editing or proof-reading.

The following morning the paper contained a report of a debate on a Bill which had been passed in the previous session, some alarming foreign rumours equally old, and a few other interesting items of news.

Of course there was a row. The old man came down in great indignation; but the joke was too good for any serious notice, and the storm soon blew over.

Editorial Notes.

So many subscribers are tempting us to publish the TELEGRAPHIST fortnightly, instead of monthly, that we feel almost inclined to yield to their entreaties. Before we can give a definite answer, we must ask for the opinion of the majority. Those of our supporters who really want the journal every fortnight will oblige by sending us a post-card as soon as convenient, and, if 4,000 subscribers vote in favour of a bi-monthly paper, we will publish every other Friday.

Mr. JOHNSTON, of the *Operator* (the American telegraphists' organ), will visit this country in June or July, when we shall endeavour to arrange for a grand International Telegraphic Contest.

MANY good telegraphists are able to get three or four words behind when they are receiving on the "Sounder," and still go on without stopping the "Sender." To accomplish this feat is the ambition of the majority of earnest clerks, and we are certain that, if we could suggest any way of training the memory for such an achievement, few telegraphists would neglect to put it into practice. This we cannot do, but we have been assured by Professor Loissette that any clerk who will take the trouble to master his system will find no difficulty in keeping three or four words in his head while he is receiving a message on the "Sounder."

The Hire-Purchase System of Furnishing conducted by NORMAN & STACEY commends itself to all classes. It combines real economy on sound commercial principles, with strictly private arrangements, and is free from all the objectionable formalities which attach to dealers and others. No interest or fees are charged, and payments can extend over 1, 2, or 3 years. The wholesale firms embrace the best manufacturers, who have large stocks for selection, and no additions are made to the ordinary selling prices. Intending purchasers should call or send for particulars.—Offices, 11, Queen Victoria-street, E.C.—[ADVT.]

Literary Notes.

"JOHN BULL'S NEIGHBOUR IN HER TRUE LIGHT." By a Brutal Saxon. (Wyman & Sons.) The answer to "John Bull and his Island," and the other exaggerated pictures of England and the English, lately published by our Gallic neighbours, has come at last. The author, in a comparatively small space, has given us the dark side of French life in vigorous language and style characteristic of his race, the Brutal Saxon hurls his denunciations at our detractors, and challenges them to refute the mass of evidence he has crammed into his book, backed up by extracts from the writings of sober, thinking Frenchmen and data of unquestionable reliability.

ACCORDING to our champion the French, as a nation, are devoid of courage, lacking in morality, and strangers to every virtue prized in this country. The much-vaunted and beautiful Paris turns out to be "a city of shams and frauds of rottenness and gimcrackery." Magician-like, he makes the Boulevards and show-places vanish, and conjures up nests of rookeries, where the inhabitants are almost as low in the scale of humanity as the natives of Terra del Fuego. The Gaul's excessive vanity is ridiculed, and his disregard for the laws of common decency made the subject of scathing censure. French politeness is all a sham, the maternal instinct is wanting in the women, and the courts of justice are places where burlesques in law and equity are daily enacted. Such a terrible picture of France and French life is not unmerited. It is our nature to "hit out hard" when we are attacked; and it is only a just retaliation for the lies and ridiculous stories lately written about us.

THE book is selling like wildfire. A second edition was printed before the first was issued, to meet the demands of the trade. Revenge is sweet, and "brutal Saxons" who have writhed under the lash of the French journalist will gloat over the revolting pictures in "John Bull's Neighbour."

GANOT'S "POPULAR NATURAL PHILOSOPHY."—In answer to many inquiries about a good work on natural philosophy, suitable to the requirements of the electrical student, we can confidently recommend the new and revised edition of Ganot's "Popular Physics," published by Longmans, Green, & Co. The woodcuts are superb, and the price is not heavy.

"MERCURY'S MISSIVES" is the title of a collection of stories and verses written by officials connected with the Glasgow Post Office. There are several pieces of merit in this little volume, and we heartily wish the speculation the success it deserves. The publisher is Mr. John A. Lochhead, 99, New City-road, Glasgow, from whom copies can be obtained, price 6d.

"THE MONTHLY CORRESPONDE" is the title of a neat little journal published at Madeira, devoted to the interests of cable employees. The "M.C." is dedicated to the staff of the Brazilian Submarine Telegraph Co., and is, we believe, the property of the courteous superintendent at Madeira. It is a rather plucky venture, and we hope it will pay.

SOME of the crew of the new cable ship *Monarch* were going through Woolwich one evening previous to their departure for the Channel Islands, and several persons seeing H.M.T.S. *Monarch* in gold letters on their caps, inquired if they were going to take troops to Egypt. The mistake occurred from reading the initial letters as Her Majesty's Transport Ship instead of H. M. Telegraph ship *Monarch*.

NOTICE TO SINGLE NEEDLE TELEGRAPH CLERKS.—There are at the present time six postal telegraph clerks at the West London Schools of Telegraphy and Electrical Engineering, 101, Uxbridge-road, London, W., who have given up appointments on purpose to learn the Sounder instrument. When the sixpenny tariff comes into operation the demand for Sounder clerks will be very great, and the needle instrument will only be employed at remote offices where messages are few and far between. Country pupils (ladies or gentlemen) are received at the above schools on the following reasonable terms:—Board, residence, and instruction, 30s. per week.

The Poetical Telegraphist.

SONNET TO THE ELECTRICIAN.

Most wonderful of all the useful arts
Is thine, adventurous scientist, whose brain,
With daring fraught, aspires to catch and train
For servitude the storm-cloud's fiery darts;
And to each erstwhile errant spark imparts
Submission to new laws that mark its course.
A messenger! more fleet than poet's horse
Called Pegasus, or flight of love-winged hearts.
At thy command the distant ear attends,—
North answers South, and East to West replies.
Man, by thine aid, communes with absent friends,
And social converse reigns beneath the skies;
The whilst astonished ignorance betrays
A superstitious heed of such displays.

F. E. S.

Dots and Dashes.

BRITISH.

THE gentleman who telegraphed his man to meet him with a horse and found a hearse waiting his arrival, will "please write distinctly" next time, or serious notice will be taken of it.

KEY CLERK (beg pardon, key telegraphist) to writer: "Just put a few 'rt's' down, will you? Are you ready?" Writer: "Yes." Key, &c.: "Gumushguedan, Petrocochino, Souvazoglu, Metallicus, Postlethwaite, Rodoconachi—" Writer: "Hold hard, this sheet isn't wide enough."

ONLY A DOT.—Of course he only missed a dot, but it was rather embarrassing when the gentleman, who telegraphed the doctor in attendance on his wife to know how she was progressing, received for reply, "She has had a child; if we can prevent her having another, will be all right by to-morrow." Of course, the doctor wrote "chill."

SCENE IN A CENTRAL TELEGRAPH OFFICE (A FACT).

Test Clerk (to Probationer): "Now then, hand us that Wheatstone Bridge."

Probationer (Looking at the resistance-box): "What does OHMS mean, sir?"

Test Clerk: "Why, on Her Majesty's service, stupid!"

GREAT ON THE SPOON AND FORK.

An old telegraphist called upon a friend the other day, and confidently eulogised his daughter's manipulation. "She is a splendid Sounder reader," he exclaimed, rubbing his hands. "Where has she been stationed?" inquired the friend. "Oh, nowhere!" "Have you any instruments at home?" "No." "Then how the deuce did she acquire such proficiency?" Old Telegraphist (in a stage whisper): "On the spoon and fork!" Collapse of friend.

AMERICAN.

(From *The Telegrapher's Advocate*, New York.)

WH is a woman's heart like a battery-room? Because both are full of cells.

"SIMPLY to the cross I cling" said a lineman as he fell from a pole and caught on a projecting cross-arm.

A SOCIAL sensation has been developed at St. Paul, Minn., by the departure of S. F. B. Morse, artist, and grandson of the inventor of the telegraph, leaving a young wife behind him.

Chambers's Journal contains an article headed, "How to fall asleep," but it has no new points for the night operator.

CUTTING the wires is not breaking the news gently.

"DEAR John is dead. Loss fully covered by insurance," were the contents of a telegram seen the other day.

"ANOTHER case of assault and battery," said a lineman in New Jersey the other day, as a car-load of salt ran off the track and demolished the battery-room.

A GOOD key is necessary to enter Paradise.

TELEGRAPH ENGINEERING.—Wanted, young gentlemen to qualify for the profession of Telegraph Engineering at the West London Schools of Telegraph and Electrical Engineering, 101, Uxbridge-road, W. Board, residence, and instruction, £2. 2s. per week.

T. S.* Items.

THE Electric B. and A. Club held a smoking concert at the King's Head, St. Paul's Churchyard, on Saturday, March 8, under the presidency of Mr. T. Gibson. There was a good attendance of members and their friends, who showed marked approbation of the various efforts of the vocalists. Messrs. P. Evetts and Headley presided at the piano with their usual good style. These very popular fixtures will, in future, derive much benefit from the committee having secured a much loftier and larger room, within a short distance from the office. The balance-sheet of this club for the year 1883 shows a good result, and reflects great credit upon the officers of the club. The expenses were £71, and the receipts £75. 17s. A five-mile cross-country handicap will take place on Saturday, April 19, either at Walthamstow or Wimbledon Common. Three prizes, value £1. 10s., £1, and 10s., will be given. A good entry is expected.

THE prominent topic of conversation at T.S. is the proposed amalgamation of the bicycle and athletic, the football, and the cricket clubs. The committee of the athletic club have offered to amalgamate upon a very generous basis, but the members of the cricket club seem very oblivious to the many advantages which would accrue to them if the clubs were united. The membership of the three clubs is as follows:—Bicycle and athletic, 80; football, 36; and cricket, 40.

THE annual sports of the bicycle and athletic club are to take place at the L. A. C. grounds, Stamford-bridge, Fulham, on Saturday, September 6.

WONDERFUL progress has been made with the new floor to be added to this office. It is expected that three months will see the Metropolitan Gallery in its new quarters, which are to all appearance very comfortable; but the windows are too high up, and too small to give the large amount of light, which the nature of the work requires, without straining the eyes.

ST. MARTIN'S F.C. v. ROSE AND THISTLE F.C.—This match was played at Victoria Park on Saturday, March 8, in wet weather. The St. Martin's added another victory to its score, but only with great difficulty, the ground being so soft that accurate passing was impossible. Nothing occurred till half-time, but on changing ends, and having the advantage of the wind, the St. Martin's pressed their opponents vigorously. Avery and Walker each secured a goal, and the office team won by two goals to nil. Walker, Avery, Gilliver, and Webb played very well.

DRAMATIC PERFORMANCE.—On Thursday last the St. Martin's Dramatic Club gave their eighth performance at the Barnsbury Hall, Upper-street, Islington. The first item on the programme was the "Secret," and we were glad to be too late to witness that worn-out old farce. Mr. Bromhead was cast for the part of Thomas, and we can give him credit for a fair share of clowning. The second piece was Dance's comedy, entitled "A Wonderful Woman." Mr. A. Sulley, though somewhat nervous, creditably sustained the rôle of the Marquis de Frontignac. His dress was handsome, but the ladders in his silk stockings did not improve the appearance of his legs. Mr. Tinson's Viscomte de Millefeurs was as lamentable a piece of imbecility as we have had the misfortune to witness. He seemed to think that he had only to bend his back and lean upon a stick to represent dignified old age. We are at a loss to find a name for Mr. H. North's impersonation (?) of an artist, and, for want of a better, we will call him "the little boy in brown." We almost felt inclined to lean forward and prick him with a pin, to see whether he was really alive. He reminded one of a dancing doll at a marionette show; indeed, our eyes wandered unconsciously towards the flies in search of the strings, and his appearance was the signal for a volley of chaff from the "Gods." What the piece would have been like without Mr. Bloxam, who was cast for the part of Crepin the Cobbler, it is hard to conceive. We laughed at the serious parts of the play, but we didn't weep over Bloxam's comedy. That gentleman saved the piece; but we cannot overlook the liberties he took with the text. It would puzzle us to find such an expression as "tommy-rot" in any of Dance's comedies. The leading lady was beneath criticism; her acting was "gaffy" in the extreme; real pathos she had none; and we felt relieved every time she left the stage. The other lady, although supposed to be a professional, played like an amateur. The concluding item was the farce of "My Turn Next," and we were glad to see the gentlemen in trousers again. (Why are amateurs so fond of costume pieces?) Mr. T. Brandon acted with spirit, and seemed quite at home in the part of Taraxicum Twitters, and Mr. Bloxam caused roars of laughter as Tim Bolus.

* Central Telegraph Office, London.

Mr. Bromhead was a very fair Tom Trap; but Mr. F. Bennett was not "in it" as farmer Wheatear. Miss Marian Swan was passable as Pegg, and altogether "My Turn Next" was a very creditable amateur performance. The audience, though small, was a noisy one; nor is it to be wondered at. Who could have been grave while the "little boy in brown" was on the stage? Our risible faculties were so severely tried that we had to remove from the front to a back seat, where we could join in the general laugh that followed every action of the grotesque little creature.

ALFRED WEBB

(Check Department Central Telegraph Office).

DIED, MARCH 17, 1884.

FALL'N from the ranks in the noonday sun,
Dropped to the rear ere the march was done;
Gone from the sound of the battle's din,
Gone where so many are mustered in—
Where officers, privates, drummers, and all
Are waiting the sound of the bugle call;
Not to the panting march and fight,
But out of all strife to Eternal Light.

For the great Commander of every soul
Has opened again the muster-roll;
And called in the voice some hail, some fear,
"Alfred Webb?" and he answered "Here!"

And left to his comrades who still march on,
Fearing to hear of the next one gone,
Is only the record stern and brief,
Left at the foot of the Duty Book leaf,—
Surely of all such records the least,
Only this, "Alfred Webb, deceased."

Yet tho' but his name with the regiment stays,
Still many among us in after days,
Will often recall, with a memory clear,
The face that was with us for many a year;
And with never a feeling but kindness speak
Of him who has gone, with the strong and the weak,
Where time has no limit, and tide no ebb!
This to thy memory—ALFRED WEBB. F. P.

Provincial Items.

CARDIFF.

THE CARDIFF POST-OFFICE PROVIDENT SOCIETY.—At a general meeting of this society, held on Saturday, March 8, 1884, the report of a sub-committee appointed to revise certain rules was considered, and the amendments agreed to, after a somewhat lengthy debate, which arose through the introduction of an opposition scheme by Messrs. Crane and S. Davies, which was lost by one vote. Never since its formation has the society proved so great a benefit to its members as at the present time. Besides providing in the case of illness a sick allowance, at the rate of one shilling and twopence for every halfpenny subscribed (subscriptions ranging from threepence to one shilling per week, and are so arranged for each member to receive the equivalent of half his salary, or as near as possible), there is a funeral fund, based on a scale according to subscriptions, i.e., 3d. to 6d., £15; 7d. to 9d., £20; and 10d. to 1s., £25. Also, in the case of the death of a member's wife there is an allowance of £10, irrespective of subscriptions, thereby combining the privileges of a sick benefit and an insurance society. We have now a capital of close on £300, which is invested in the Post-office Savings Bank, and, altogether, the society is in a most flourishing condition, and has far exceeded the anticipations of its promoters. Recently the society has conferred an additional privilege upon its members by advancing to them the equivalent of their salaries when going on leave, at the rate of 5 per cent. interest, which, in many cases, is a great convenience.

DARLINGTON.

On the night of the opening of the late debate on the proposed Vote of Censure 42,000 words were wired from T.S. to D.L. On Thursday night, the 28th ult., when Mr. Gladstone introduced his

Reform Bill to the House of Commons, we were in receipt of 30,000 words. Your readers can imagine that our staff—which numbers fifteen telegraphists—have "lively" times of it during the Parliamentary session, when we work two direct "news" wires.

We have a fair number of subscribers here to the TELEGRAPHIST. Wish you success.

DERBY.

MIDLAND RAILWAY.—It is with the deepest regret that we have to announce the death of Lineman Pugh, for many years connected with the telegraph service of the Midland Railway at Leicester. He was taken suddenly ill on the evening of the 7th inst., and died the same night. He leaves a widow and thirteen children to mourn his loss.

FRED HARRISON, of this office, has obtained an appointment on the Cuba Submarine Cable Company, and expects leaving this country for Cuba on the 28th instant. The best wishes of the staff accompany him.

DOVER.

In anticipation of the reduced tariff in October next, a second "T.S." wire is to be duplexed, in addition to our present "O.C.S.X.," which with the present rate is kept fully employed with commercials alone; and in addition to this the Royal Engineers are now running a new wire from here to "T.S." Occupying as we do a somewhat central position with regard to the neighbouring towns of Canterbury, Ramsgate, Margate, Hastings, Ashford, Folkestone, Chatham, Sheerness, Deal, &c., we are very frequently called upon to assist one or more of these places, when we find our present communication with "T.S." anything but adequate to the amount of transmitted work, which at such times is literally poured in upon us, and which we shall be enabled to cope with more satisfactorily with the improved communication.

The TELEGRAPHIST was hailed here with delight from the first, and you have eight regular subscribers among our comparatively small staff. One of "our fellows," in fact, purchases two copies, one of which he posts to a lady manipulator in the country!

DUNDEE.

THE tenth annual festival of the Postal and Telegraph staffs was held on the evening of Wednesday, Feb. 27, in the West-end Assembly Rooms. The company numbered about 170. Mr. W. Gibb, postmaster, occupied the chair, and was accompanied to the platform by Mr. Proudfoot, Mr. G. A. Duncan, Mr. G. Hogg, Mr. Lyon, Dr. Gibb, and Mr. Chalmers. After tea the Chairman referred to the alterations now being effected in the Dundee office, the introduction of the parcels post, and sixpenny telegrams. To overtake the large increase of work expected to follow the lowering of the rates for telegrams, a spacious new instrument-room had been built, and several new wires were being erected. He also contrasted the work now done at Christmas with that of past years, and thanked the staff for their energy and zeal in overtaking the arduous duties imposed upon them during the closing week of the year. Mr. Gibb concluded by referring to the retirement of Mr. Warren, the surveyor, who had so long and ably taken charge of the northern district. Songs, &c., were sung by Messrs. Anderson, Henderson, and Hird; Mrs. Forbes, Miss Pallen, and Miss Robertson. Mr. Wallace presided at the piano. An assembly followed, and dancing was engaged in until an early hour. Mr. J. F. Lyon performing the duties of M.C. with tact and courtesy. In the opinion of one and all this was the most successful and enjoyable of the annual gatherings yet held.

CRICKET.—The eighth annual opening meeting of the cricket club in connection with this office was held in the Imperial Hotel, on February 23, when the following gentlemen were elected office-bearers:—Mr. J. D. Robertson, president (re-elected); Mr. A. T. Mitchell, vice-president; Mr. G. B. Kinnoch, secretary and treasurer; and Messrs. H. Anderson and H. Currie, members of committee.

DURHAM (N.E.R.).

Few railway clerks remember the *Telegraphist* of 1876, and the present paper is regarded as something new. At the various stations of importance the operators have become subscribers, and, as the so-called heads of the department favourably recognise it, the TELEGRAPHIST will gain in popularity each month. Railway clerks have excellent opportunities of making the paper known, and they could influence its sale by "training" a copy to the clerks on their respective branch lines, with the request to "forward to the next station after perusal." By this means the booking-clerks (who were once telegraphists) and others out of the "brotherhood" may be enrolled. Block clerks and assistant signalmen, another and large section of the railway telegraph department, may also find something in the TELEGRAPHIST worthy of their attention.

EASTBOURNE.

If the "dastardly miscreants" who favoured our respected Postmaster here with a threatening letter, kindly promising to blow up the Post-office one night last week, could only have known the immense amount of innocent amusement they have caused the staff generally it is almost a certainty they would have tried some other more gullible and more easily frightened officials than those at the "Empress of watering places." Why even some of the dullest members of the staff have blossomed into perfect wags over this blowing up business, and the jokes and repartees have been of the most varied description.

The TELEGRAPHIST is regarded with great favour here and is well supported. The prevailing opinion being the sooner it becomes a fortnightly, or even weekly, journal the better. It has been suggested by a waggish member of the staff that this is the first time that a Telegraphist has ever been "bought." How many of us have been "sold," of course, is another matter.

EDINBURGH.

ELECTRIC GOLF CLUB.—The monthly competition for the silver medal of this club took place on March 18, over the Bruntsfield Links. Wet and stormy weather had made the putting greens heavy, and the conditions generally were unfavourable to low scoring. Despite this, Mr. W. Wood, superintendent, who takes a warm interest in the game, carried off the prize with a score of (75 less 8) 67.

GLASGOW.

PRESENTATION.—On Wednesday evening, March 5, in Ancell's Restaurant, Glassford-street, Mr. Joseph Fogarty, Inspector of Messengers, was entertained and presented with a purse and sovereigns, on the occasion of his retiring from the service. As this was the first case in Glasgow of retiring, owing to old age, unusual interest was manifested in the event. Mr. William Douglas (Accounts Branch) presided, and spoke highly in favour of Mr. Fogarty as a public servant, and referred to the many good qualities possessed by him. Mr. Fogarty, who on rising to reply was greeted with loud and prolonged cheers, said he thanked all for their very great kindness to him that evening; and to the lady subscribers he wished to convey his best thanks. Songs and recitations were then the order of the evening, Mr. William MacLeod opening the ball by giving, in splendid style, a reading, entitled the "Tragic Shaver," followed by Mr. Miller's rendering of the "Guard-ship." Mr. T. Hall gave a good account of himself in the "Midshipmite," as did also Mr. James Lang, in a "Pint of Wine." Some merriment was caused by a comic effusion given by Mr. Fogarty, entitled "Dicky, the Barber's Clerk." Our old friend, Mr. Tom Preston, helped to enliven the proceedings by singing one or two of his comic songs, his delineation of the school-master being much relished. Other members of the staff contributed to the programme, and altogether a most enjoyable evening was spent. A vote of thanks was awarded Mr. Douglas for presiding, and the proceedings were brought to a close by the company singing "Auld Lang Syne."

GRIMSBY.

MR. H. PALMER has gone to Peterbro', having exchanged with Mr. Arthur F. Barnes.

HASTINGS.

OUR fifth Annual Outing takes place on Good Friday, April 11th, starting at 9.30 a.m., in Waggonettes from the office for Sandhurst, Kent. All brother officers anxious to avail themselves should communicate with the Hon. Sec., Mr. Duke.

INVERNESS.

MESSRS. D. MACDONALD, H. Johnston, and J. Mackae's promotion to the first class has given much satisfaction.

MR. WILLIAM CLARK, Post Office, has taken unto himself a wife. We hope soon to have the pleasure of recording a few more unions of a similar nature.

IN the Telegraph Department (to use a nautical phrase) we are only now getting into ship-shape, after a most effectual stoppage to the north and west of about a month's duration. As we entered the office on Monday, the morning after the disastrous snow-storm of Sunday Feb. 3, we felt as if something had gone sadly wrong. Instead of the hum and noise which usually met our ears, silence reigned supreme; nothing being heard to break the monotony but the occasional grinding noise of the (hurdy-gurdy) "A B C," or the operator in charge of the only Morse-working wire. Out of a total of twenty-nine offices with which we have communication, only half-a-dozen could be got. The intimation that our services

for the present could be dispensed with was quietly received, and we left the office humming the appropriate song "We've got no work to do," feeling, indeed, the reality of it.

LANCASHIRE AND YORKSHIRE RAILWAY.

THE contest which has just come off has excited the greatest interest amongst the staff of this company, and regret is expressed that we had not one or two of our men in the competition. The railway companies use generally the single-needle instruments with a drop handle; but this company uses mainly the single needle with the double taper keys or the Bright's Bell Relay, improved as mentioned in a former number, and it would seem desirable that the railway clerks should have a chance of showing their skill in any future competition on such instruments as they may be used to handle. The absence of our clerks on the occasion in question was due to an impression that Morse Keys only would be used, and this proved to be the case.

LANCASTER.

THE TELEGRAPHIST has been well received at this office, and we should be delighted to get it once a fortnight instead of once a month.

MR. THOMAS HUNTER left here for York on the 17th March, he having been transferred to that office.

LEICESTER.

THE annual meeting of the Leicester Telegraph Clerks' Sick and Death Benefit Society was held on Wednesday evening, March 5th. The Secretary, in presenting his balance-sheet for the year ending March 1st, said that the club was in a very prosperous and satisfactory state, for, although the expenditure for the past twelve-months had greatly exceeded the receipts, yet there was a capital of £54 to our credit in the Post Office Savings Bank and in treasurer's hands. During the nine years the club had been established we had paid away for sickness and death over £56, the past year alone costing us £19.10s., owing to two deaths and an excessive amount of sickness. The average number of members since establishment had been 21, but he was pleased to say it had now reached 24, with a prospect of a further increase. Notice was given that at next quarterly meeting a resolution would be moved to increase sick-pay to ten shillings. The present contribution is twopence, and sick benefit seven shillings per week, with death-grant of £1. The officers for the ensuing year having been elected, votes of thanks to the retiring officers were passed, and the meeting dispersed. The Secretary will be pleased to supply any office with a copy of rules.

LIMERICK.

It is understood that this office is about to be made first-class. Our work has amounted to over the required number of messages for a long time past, and it was the want of first-class apparatus, viz., a Wheatstone (which we now have), that prevented Limerick being amongst the first-class offices at the last classification. This, of course, will cause some promotions, and under the amalgamation scheme post office clerks (who know nothing whatever about telegraph business) would fill most of those vacancies, they being senior in point of service. It is rumoured here that the amalgamation scheme is a failure, and that each department is to work independently again.

PREPARATIONS are going ahead rapidly for the reduced tariff, several new wires being in course of erection. A large addition to the staff is also to be made.

LIVERPOOL.

VERY extensive alterations are in progress at this, the head post-office, in connection with the long-delayed and again-postponed sixpenny rate. The partition walls between the present instrument-room, the male and female clerks' kitchens, superintendent's office, correspondence and message-sorting-rooms, lavatories, &c., are all being demolished, and the roof is to be raised. When completed, the new instrument-room will be nearly three times the size of the old one, and will probably be the finest in the three kingdoms. New kitchens, cloak, and retiring rooms have already been provided, furnished with every convenience that any telegraph clerk could reasonably expect or desire.

A MR. MERRYMAN, of the Provident Clerks' Insurance Company, addressed a handful of the Liverpool Telegraph Staff a few days since on the manifest duty of life insurance and the absolute advantage of his society over every other. Of course, we expect Mr. Belcher of the Savings Bank Department will come and sing the praises of the United Kingdom Postal and Telegraph Service Benevolent Society, Mr. Small those of the Post-office Insurance Society. We have a faint hope that Mr. Fawcett may even deign

to come on a Provincial tour and tout for the Government Life Assurance and Annuities Branch; and we are wondering whether Mr. Henry George or Mr. Joseph Arch could be engaged to deliver a course of lectures upon the Permanent Association. All the Associations ought to have a fair field.

FOOTBALL (North End Telegraphs v. South End Telegraphs).—This Association match was played in splendid weather at Newsham Park, on Wednesday, Feb. 13. The leather was started at 11.30 a.m. by Rowlands for the north, who played with the wind in their favour. Rowlands passed to Cumming. By a good run on the right, the latter made an excursion into the South's territory, and put in a hot shot at goal, which was stopped by Wolfe at the expense of a corner. Williams took the place kick, and, centring well, enabled Stevens to defeat the goal-keeper, the North End thus scoring the first goal amidst much enthusiasm. Play continued in favour of North, chiefly owing to the combined play and clever passing of their forwards, and at half-time they had scored four goals. Shortly after the change, the South, having the wind in their favour, made several determined attacks on their opponent's goal, but were unable to defeat the goal-keeper, who was well supported by the backs. Towards the close, the North again played up strongly, and a pleasant and stubbornly contested game resulted in a victory for the North by nine goals to nil. Of the North team Messrs. Rowlands, W. T. Williams, Rodgers, Small, McConchie, Stevens, and Cumming were most conspicuous, the first-named player being always on the ball; while for the South Messrs. Wolfe, Poole, Taylor, Whitehead, Cooper, Downard, and Andrews played well. It is but fair to say that the South End played a man short, and were, in addition, obliged to find a substitute at a few minutes' notice.

THE members of the Liverpool Telegraph Staff, together with their friends, held another musical evening on Saturday, March 8, which was attended by a large and appreciative company. The following programme was rendered in a very creditable manner, accompanied by Mr. J. Evans, jun., on the piano:—Part song, "Who will o'er the downs so free," Messrs. Jones, J. Evans, jun., S. E. Steel, and W. T. Williams; "The Old Brigade," Mr. W. Merchant; "Once Again," Mr. J. Evans, sen.; "Sweethearts," Mr. J. Evans, jun.; dialogue from "Richard II.," first act, Messrs. Crichton, Shea, Hebson, and Stott; "Our Crew," Mr. Jack; recitation, "Battle of Killiecrankie," Mr. Shea; "Shandon Bells," Mr. J. Sullivan; "The British Lion," Mr. Moore; "Our Jack comes Home to-day," Mr. E. A. Evans; "The Stars are Bright," Mr. Taylor; "Let me Dream again," Mr. Jones; recitation, "The Ruined Cottage," Mr. Crichton; "Wait till the Clouds Roll by," Mr. Jones; "Micky Rooney's Band," Mr. J. G. Evans; "Duck-foot Sue," Mr. Sefton; "Kitty of Coleraine," Mr. C. J. Rogers; "Shoulder to Shoulder," Mr. S. E. Steel; "The Convivial Man," Mr. T. Healy; "The Scrub," Mr. Summers; "Sammy Stammers," Mr. G. H. Wilson; "By Jove," Mr. Summers; "Patience," Mr. Shannon; "The Masher," Mr. Summers. Mr. Jones was loudly encored, and the following also came in for a large share of appreciation, which they well deserved:—Mr. W. B. Merchant, S. E. Steel, W. T. Williams, J. Evans, sen., Shea, Crichton, J. Evans, jun., E. A. Evans, and Summers. After a vote of thanks to the artistes, it was suggested that a reunion, the details to be supplied later on, should take place towards the end of the season. The idea was fully appreciated by all those present. This brought a most enjoyable evening to a close.

MANCHESTER.

THE NEW POST OFFICE.—The style of architecture may be described as composite Classic. The building consists externally of Portland stone, relieved at intervals with elaborate carving. It has a frontage to Brown-street of 246 ft., and extends back to Spring-gardens, a distance of 121 ft. 10 in. The 246 ft. will be the total length of the building when the old premises (Post-office) have been pulled down and rebuilt. There will be three entrances on the Brown-street side; one leading to the general office, another to the telegraph and inquiry offices, and the third to the letter-carriers' rooms; the three opening into a vestibule. The entrances are embellished with granite pillars, and approached by six or seven stone steps. The Spring-gardens side of the building is the finest from an architectural point of view. Here the entrance consists of a portico of graceful design projecting from the main building some seven or eight feet. Handsome fluted pillars, with Corinthian capitals, rise from the portico, or first-floor level, to a height of about 30 ft. They are 3 ft. in diameter at the base, and 2 ft. 6 in. at the top, being finished off with carved and fluted frieze and dentil cornices. Running round the top of the building is a balcony, consisting of a moulded base, with turned stone banisters and ornamental cornice. The total height of the structure is about 78 ft. Entering the building, we

proceed first to the basement. Here there is a "delivery room," 33 ft. 5 in. by 19 ft. 10 in.; the engineer's rooms, two in number, each 53 ft. 4 in. by 35 ft. 8 in.; two post-office store-rooms, one 53 ft. 4 in. by 33 ft. 10 in., and the other 53 ft. 4 in. by 31 ft. 7 in.; the battery-room, 62 ft. by 18 ft. 10 in.; general clerks' retiring-room, sorting clerks' retiring-room, and similar rooms for the counter clerks, the delivery clerks, and the boys, with kitchens and lavatories. All the rooms on the basement are 12 ft. 6 in. high. From the ground-floor we enter the sorting-room, 165 ft. 5 in. long by 55 ft. wide and 24 ft. in height. It is lighted by means of skylights. On this floor there are private bag-rooms, the registered letter office, the private box office, the money-order office, the post-master's offices, the telegraph office, a waiting-room, and letter-boxes for the postage of letters. The height of these rooms, excepting the sorting-room, are of an average height of about 21 ft. Ascending the first-floor by means of a broad stone staircase, we enter a corridor, which is 9 ft. 4 in. wide, from which access is gained to a series of rooms, including one for the letter carriers, 79 ft. 6 in. by 29 ft. 6 in. wide; the inquiry office, the inspector's room, the general dining-room and kitchen, the clerks' dining-room, retiring-rooms for superior officers, engineer's office, telegraphic superintendent's office, postal correspondence rooms, telegraphic correspondence rooms, and a store-room, all being 16 ft. high. On the top floor the principal room is set apart for the instrument department. It is 142 ft. by 117 ft., and is 19 ft. 9 in. high. There is also a dining-room for the male telegraph clerks, and another for the female clerks; a retiring-room for superior clerks, and a mechanics' shop, an instrument store-room, and a room for the matron. The floors throughout are laid with concrete. The fact of the walls being 3 ft. thick—consisting, as already indicated, of huge blocks of Portland stone backed up by brick—gives some idea of the substantial character of the building. It would be an inestimable boon if a room could be allotted for gymnastic exercise. True, every park in Manchester affords facilities for this recreation, and there are also a number of associations for the sole purpose of gymnastics, yet when a clerk finds an hour's "split" in his duty, such a room would be a healthier resort than at present. What body of workmen have greater need for such exercise than telegraphists? We think the sick-list would not be so large if this suggestion were adopted, and any subscription that might be necessitated would be given willingly by the whole staff.

PROMOTIONS.—Messrs. T. Cowser, W. Cheadle, T. Larkin from 2nd Class to 1st Class telegraphists.

NEWPORT (MON.).

THE staff at NE congratulate their *confrères* on having, at last, an organ devoted entirely to their interests; our appreciation is shown by a moderately good subscribers' list—over 20. We are inclined to think that had it been in existence some time ago we should have derived material benefit therefrom.

THE Telephone Exchange here is progressing well. It is now the largest in South Wales, and renters are continually being added. With the growing importance of the town, which is considerable, it is expected the Exchange will soon outgrow the present provision made for it. We have communication with Swansea, Cardiff, and the Eastern and Western Valleys of Monmouthshire. There are three trunk lines between Newport and Cardiff, which will be shortly supplemented by a fourth.

THERE is as yet nothing definitely known as to the provisions to be made in anticipation of the sixpenny rate. Arrangements are pending for extensive alterations at the Head Post-office, in High-street, incident upon the increasing trade of the town, and it is rumoured that the Head Telegraph-office, which is now in Dock-street, will be removed there. Various reports are rife as to the additional accommodation to be provided, among them being improved communication with TS, duplex to BS, a second duplex to CF, a second duplex to NDJ, a duplex to PP, &c.; but nothing definite is yet known. As in other offices, we have received instructions to expedite the holidays.

WE have pleasure in recording the promotion of Messrs. H. A. W. Turner and W. W. Grant to the first class; the former to the vacancy caused by the appointment of Mr. G. Robshaw to the post-mastership of Beverley, Yorks, and the latter filling an appointment created by an increase of staff.

THE rotaries of Terpsichore among us have a flourishing class, and weekly meet to "chase the hours with flying feet." It is anticipated the season will be brought to a close by the usual enjoyable "long night."

PORTSMOUTH.

LAST month a concert, organised by several of the Post-office staff, was given in aid of the Post-office Orphan Home, and proved a great success, about £50 being realised for this deserving charity.

I REGRET to announce the death of our fellow-clerk and genial companion Arthur Hutchings, who died on Feb. 19, aged 25.

We offer our congratulation, in conjunction with many others, to Mr. Chapman on his well-deserved success in the competition, which appears to have met with universal approval.

OUR town is to be again the scene of the Easter Volunteer gathering, and the usual accompaniment—plenty of work—will, no doubt, fall to our share. There are few other places which have such a variety of special events as this: if it is not a review, it's a Court-martial, or a collision, or the return of troops from war; in fact, very seldom a week passes without something out of the common requiring elaborate expansion by the press.

THE resumption of the "Electron" papers is looked forward to with considerable interest, their simple explanation, if I may use the word, having proved most attractive to the would-be student.

SOUTHAMPTON.

2ND HANTS RIFLE VOLUNTEERS (Civil Service Company, Southampton).—The anniversary dinner of this Company took place at the South-Western Hotel, on Thursday evening, the 13th inst., under the presidency of the commanding officer, Lieut. Sharpe. The chairman was supported by Col. Stotherd, R.E., Director-General Ordnance Survey, Great Britain, Lieut.-Col. Buchan, 2nd Hants, Captain Neville, R.N., Captain Mortimer, 1st Hants, Surgeon Cresser, Lieuts. Baker and Darling, 2nd Hants, Quarter-Masters Goodwin and Bennett, Colour-Sergeant Racine (who occupied the vice-chair), Mr. Gossett (Customs Surveyor), Mr. Pellatt (Postmaster), Mr. Tubb (Telegraph Superintendent), Sergeants Johnson, Ennis, Hendin, and Bell, and about seventy members, of the Company and their friends. An excellent repast was served by the manageress (Mrs. Linford), after which the chairman announced apologies from several gentlemen who were unable to attend. The usual loyal and patriotic toasts were given by the chairman, and responded to by Colonel Stotherd, Mr. Gossett, and Lieut.-Colonel Buchan, Colonel Stotherd giving an interesting account of the operations in the Soudan under his old friend Sir Gerald Graham. Lieut.-Colonel Buchan said he was very glad to hear that the men who were prepared to go into a fort for four days at Easter embodied 17 officers, 16 sergeants, 400 rank and file, and 30 band. The remaining portion of the corps could only spare the time for the Review. "Success to the Civil Service Company" was proposed by Colonel Stotherd, who mentioned they were now nearly up to full strength. The Chairman, in response, briefly traced the progress locally of the Volunteer movement, and referred to the success which had now attended the formation of a Civil Service Company. Colour-Sergeant Racine also replied. "The Visitors," given by Lieutenant Barling, was responded to by Captain Mortimer and Mr. Pellatt. Corporal Emm (Telegraph) gave "The Press," which was suitably acknowledged by reporters present, and the proceedings terminated about midnight. The following acted as committee:—Colour-Sergeant Racine, Sergeants F. Ennis and Hendin; Volunteers Grandison, Murray, and Bagshaw (Ordnance); Lance-Sergeant Bell and Corporal Emm (Telegraphs) and Volunteers Brereton and Sobey (Customs). Some capital songs were given during the evening, the accompaniments by C. S. Racine and Volunteer Mack.

SWANSEA.

THE cricket club formerly belonging to this office, and known as the Swansea Telegraphists, has, we understand, been resuscitated, and the following officers appointed:—Mr. Jem Rind, captain; Mr. Richards, vice-captain; Mr. Ward, secretary; Mr. John, treasurer; and Messrs. Smith, Chislett, Howells, Collins, and Prior, committee. We wish it every success and hope the usual annual meeting with CF at Bridgend will be revived.

YORK.

THE undermentioned changes have taken place in the telegraph staff here since our last:—Promotions: Mr. C. Wardle, night superintendent, to be superintendent; Mr. J. B. Foster, 1st Class S.C. and T., to be night superintendent; Messrs. J. W. Robinson and J. Catley, 2nd Class to 1st Class. Transfer: Mr. H. P. de Lacy Leacy, from Teignmouth to York. Appointment: Mr. A. G. Turner has been appointed a provincial clerk-in-charge.

CAUTION TO LADIES AND GENTLEMEN who think of entering the Telegraph Service. Never pay for instruction in Telegraphy before you have inspected the system and seen the instruments you will have to work. Beware of clap-trap advertisements emanating from Amateurs. The WEST LONDON SCHOOLS OF TELEGRAPHY, 101, Uxbridge-road, W., are always open to the inspection of the public, and pupils are received on trial.—[ADVT.]

Colonial Items.

SOUTH AFRICA.

KIMBERLEY.—To judge from a letter received by one of our staff from a large home office, it would appear that the generality of our "Brotherhood" in the English service have very crude ideas as to the Cape Telegraph Service. The writer remarks that the prevalent opinion in his office is that we must necessarily be very backward in the manipulating art, seeing that the telegraph here is in its infancy. We are very anxious to dispel illusions of this character, and, with all due respect to our "knowing" correspondent, would invite him to sit down at one of our busy wires for half-an-hour only. We have no doubt that ere the half hour was gone, his ideas would have undergone a complete transformation, and he would quickly come to the conclusion that we work far more rapidly than at home on the same class of instrument (single current sounder with relay), universally employed on all our lines. We have seen new comers to our service fresh from home, utterly nonplussed for a time with the way in which our traffic is dealt with. These men, when they had become used to our ways, turned out excellent manipulators, and said they never had any idea that we could get the work off so quickly and with so little fuss. True, we are backward as regards instruments, but the day is not far distant when we shall have our Duplex and our Wheatstone, but at present the instruments in use suffice to carry off our work. We have no hesitation in saying that we have come as near perfection as possible in the use of the instrument in vogue here. Were it otherwise, the work would never be kept under. Now, at home, we suppose an average of forty messages per hour very fair working on a single current wire. But what do our *compères* think of seventy messages in the hour? Yet this is a frequent occurrence, and would be more common did not the climatic influences interfere so much with the wires. We cite a case. Last month one of our staff in KB totalled seventy messages in the hour on our main line, and six of these messages were of sixty words in length! The wire in question is 430 miles long, without a single intermediate station. This speaks volumes for the workmanship in the erection of the line, and for the manipulation of the clerks. But, when it is considered that the majority of our clerks are imported from home, and as fine a set of manipulators as ever worked an instrument, such good results need hardly be wondered at. Here, in Kimberley, we average about 500 messages a day, all told, and one wire takes four-fifths of the traffic; and if the line is free from climatic influences or faults, there is never more than half an hour's delay. Need more be said to convince our home friends that this service is not backward, but very much the reverse?

We lead a fine easy life in this part of the world. We all have quarters over the office, a nice cosy room each, which we furnish comfortably, and are all as happy and merry together as possible, and contrast our position here with that which we held in the Home service, saying we would not care to return to the old country, to the late hours and ever varying change of duties, for a fortune. We are able to save a nice little sum out of our monthly salary, which we allow to accumulate steadily, so that in a couple of years' time we may take a thoroughly enjoyable trip over to the old country. I am sure there are very few discontented ones in our service, and those who grumble must do so for the sake of grumbling, for all of us are better off in every way. Each one has an equal chance of promotion, and for those who try to do their best and keep steady, promotion is very rapid.

WE number a staff of five—Donald A. McIntyre, Esq., manager, and Messrs. Aspinall (L.S.), Nibloe (Stranraer), Davis (M.R.), and Watt (A.B.), and a staff of six messengers (educated Kaffirs, who are exceedingly smart, and would put to shame many white messengers). We do 150 forwarded, 150 received, and 70 equalling 140 transmitted per day. The monthly revenue averages £450, or an average of £15 per day.

MR. MCKENZIE, recently of our staff, has been appointed Postmaster of Barkley West, some twenty-five miles distant from this. Mr. McKenzie originally hails from Inverness, and entered the Cape service August, 1881.

Cable Companies.

SPANISH NATIONAL SUBMARINE TELEGRAPH COMPANY (Santa Cruz de Tenerife).—Your admirable paper has reached this little island, just joined to the continent by cable to Cadiz. We have all here hailed it with pleasure, noting among the names mentioned many

an old friend of our E. and I. days. This station, the head office of the above company, will ultimately work to Cadiz, Gran Canaria, La Palma, and St. Louis Senegal. The cables to the first three places are already laid and working. To Cadiz we use the mirror, a writer being dispensed with by an arrangement of a narrow looking-glass which throws the spot on to the pad, enabling the clerk to read and write for himself. We have at present here Mr. J. Jeffery, manager, late of the Direct Spanish, Mr. W. F. O'Brien, superintendent, and Messrs. W. Pilfold from the Anglo Company, Valentia, and for many years on the Cork staff, W. Davis, late of Emden, German Union, E. Hurdus, late of Valentia, and M. R. and J. Weatherly, from the Direct Spanish. The staff will eventually be larger when the Senegal cable is laid. At present the work is carried on at the hut, about two miles from town, on the edge of a beautiful little sandy bay, the donkey-ride to and from duty being somewhat different from our T.S. *confrères'* journeys by "bus" or "underground." The carnival fun of three days is just over. The "Inglessas" riding through the town were always targets for an extra hot volley of shells filled with flour, &c. The climate is lovely, and so far the clerks are quite contented with their lots, the manager and superintendent doing all in their power to make things agreeable—masked balls, concerts, &c., *ad lib.*

We have been favoured with the following interesting items from the Superintendent at Las Palmas de Gran Canarias, one of the new stations of the Spanish National Cable Company, to a friend at Portsmouth:—"Las Palmas, Jan. 30,—I was glad to receive your letter. We have been very busy lately, and had little time to spare for writing. We opened these cables to the public on Jan. 5, and have been doing pretty well since. We get about thirty each way from this place. Not so bad for a start. Am at present working from cable-but on the shore, about 3½ miles outside the town, as I have not a land-line yet; have, however, just started laying down underground cable, so shall not be doing the "Robinson Crusoe" business much longer, although it's very jolly down here. I come down at nine and stay till five. We have got a very fine office in the central part of the town, and shall, no doubt, have it comfortable enough in the course of time. I wish the island was a little nearer, that we might see some of our friends occasionally; it is really a delightful place. The weather has been anyhow for the last few weeks, exceptional for this time of year and this part of the world, nothing but heavy gales and rain. Two ships came ashore in the bay a week or two ago. As a rule the climate is grand, and I am taking some meteorological observations with the idea of proving that it is better than that of Madeira, and so attracting invalids to the island! There are several English visitors stopping here at present, amongst them a parson who makes himself very affable. We passed Christmas in a very quiet way; we, however, had a pudding! I haven't spent Christmas at home since '75, and suppose I am not likely to for some years. The Cadiz cable is down, and has been, in fact, for the last three weeks, and the *Dacia* has been grappling all this time in 2,000 fathoms and can't manage to scrape it up. The people here are jolly wild about it, and say the whole thing is a fraud and the cable no good! I suppose, though, with patience we shall be all right again soon. I got a prospectus of the TELEGRAPHIST, but forgot all about it until I received your letter. I looked in the police news of your local papers after Christmas, but did not see any names I knew! It's five months since I left you—how the time slips along. It will be "old fellow" in reality in a very few years, and a very pleasant old gentleman you will make. Give my love to all the fellows." &c.—Yours truly,

BIRTH.—On February 21, the wife of Mr. Wm. Fothergill (York telegraph staff) of a son.

CHARLES READE, D.C.L., the distinguished author of "Never Too Late to Mend," says:—"I have been long acquainted with the Senior Principal of the West London Schools of Telegraphy and Electrical Engineering. He is a devoted lover of science and a public writer on scientific subjects. He is a Telegraphist of long standing and well able to teach the use of the various instruments. I happen also to know what high prices and unfair advances are often obtained from pupils in telegraphy, especially from females; and I think it a boon to persons of that sex, and to the public, that the Principal of these Schools offers to teach telegraphy, as other arts are taught, in a straightforward, honest way, and on fair terms proportioned to the advantage any able, industrious pupil can derive from so able and zealous an instructor." Send for a Prospectus and the Opinions of the Press to the PRINCIPALS, WEST LONDON SCHOOLS OF TELEGRAPHY AND ELECTRICAL ENGINEERING, 101, Uxbridge-road, W.—[ADVT.]

Correspondence.

NOTICE TO CORRESPONDENTS.

The Editor declines to publish any letters containing abuse or personalities. The name and address of the writer must be enclosed, not for the purpose of publication, but as a guarantee of good faith.

Correspondence invited from English and Colonial Telegraph Clerks. Contributions for the May number must reach the Editor before April 15.

A BRAY FROM A GLASGOW ASS.

A CORRESPONDENT, who signs himself "Transmitter," writes:—"A telegraphic farce was enacted the other day in London. The enterprising editor of a new journal devoted chiefly to the interests of Postal Telegraphy, got up what he called 'a championship competition,' and offered a cup or 'pot' to the best manipulator in the Post-Office service. The transparency of this advertising dodge was so perceptible that very few clerks outside London answered to his invitation to compete. The competition went on, however, and the prize was awarded to a man named Chapman—a clerk belonging to the London Stock Exchange. Great indignation, and not a little disgust, has been excited throughout the service by the absurdity of this competition being called a 'championship.' It may be the championship of London, but certainly not of the whole Postal Service. Besides, the competition was only a sending one, and no account was taken of the receiving abilities of the competitors. The latter is the more important, as it requires the exercise of the brain, while the other is purely mechanical. The editor devoted several pages of his journal to a high-flown description of the farce, with the manifest object of magnifying its importance to his own advantage. The "Champion for 1884" had a fulsome sketch given of his life, and the editor's description of his transcendental abilities is only calculated to hold him up to ridicule and contempt, as the lawyers say. Many an action for libel has been raised on less grounds. One clerk from Glasgow who was on his holidays in London, entered for the competition, never telling any one at home of his intention. He failed utterly, and has been greatly chafed since his return for his hardihood in bringing the name of the Glasgow staff into connection with an advertising dodge. He, however, asserts he told the editor he in no way represented Glasgow; yet his name has been paraded as the Glasgow representative, to the manifest annoyance of the local staff, who, while not depreciating his sending abilities, yet assert their real representative would have been a much better man. 'The Champion' only sent 33 words a minute, which is below the average."

[By the same post came the following effusion. Strange coincidence!—Ed. TEL.]

THE BRAY OF A GLASGOW ASS.

"Oh that I had been writ down an Ass."—Shakespeare.

When an ass opes his mouth, to give vent to his views
On a subject he's perfectly up in,
Such as thistles or carrots, the length of his ears,
Or the state of his heels after "roughin,"—
He's a right none can question to say what he likes,
And to "Hee-Haw" as much as he pleases,
And he may (quite by accident) drop here and there
A few words of sense ere he ceases.
But whenever an ass speaks of things he knows not,
Though of course he is then in his glory,
'Tis a dangerous thing to give heed to his brays,
Or implicitly trust to his story.
One should always remember the fable of old,
Phædrus tells of the asinine beauty
He came upon eating the grass on his lawn,
Contentedly cropping off duty.
The ass was politely desired to "move on,"
But, instead, he began by abusing,
Attempting to argue his right to the land,
In a manner intensely amusing.
But, alas! Phædrus soon shut him up in two ways,
And replied, "As 'tis plain you are straying,
Keep silence I pray, for your mouth, although large,
Nature only intended for braying."
Then prithe remember he is but an ass,
And speaks but as Nature has taught him;
So crown him with thistles and let him grow fat
On the "chaff" that his braying has brought him.

[We have no comment to make upon the braying of the GW. Ass—indeed, we must confess that his asinine production has caused us no little amusement. We are quite willing to let him bray until his heart's content, but we decline to waste any more ink on such a pitiable object.—Ed. TEL.]

To the Editor of the TELEGRAPHIST.

DEAR SIR,—The opinion of the staff here with regard to the letter signed "Transmitter" is that it is offensive in tone, deliberately inaccurate, and evidently written by one who, seeing the success of the competition, the notice taken of it by the press, and the encouragement given it by high officials of the Department, is disappointed at not having been "in it." The competition was an open one, every one was invited to compete, and no one has questioned the fairness with which it was conducted. The prospective winner was referred to in the announcement as the "Champion Sender;" and Chapman is undoubtedly the champion until he is beaten by a better man. If a certain number of the men did not choose to compete that was their affair, and although the man from Glasgow was not authorised to represent that office, perhaps it is as well he did not take back the cup with him, as in that case we should have been deprived of the result produced by the "exercise of the brain" of "Transmitter."

—Yours faithfully,

JAS. J. PHILPOT.

Stock Exchange, March 14, 1884.

M.R. POSTAL JUNIORS AND TELEGRAPHY.

SIR,—I am glad to hear from M.R. of the new arrangement which came into operation there on March 17. A few weeks back the juniors were under orders to learn telegraphy and to attend the "school" two hours daily for that purpose out of their own time. Failing to do this, they were reported, and, if missing often, punished (extra duty). Their increment depended on passing a certain standard—not at all difficult, but still entailing a good deal of practice. The majority of duties in the post-office for junior sorters are split, such as 10 a.m. to 4 p.m., and 8 p.m. to 10 p.m., and this additional telegraph attendance made it ten hours per day. After sorting for six hours, it can hardly be expected that they should attend school for two hours and then return to the post-office to complete their duty. The junior telegraphists in learning the postal work were not so restricted, they having the privilege of learning it out of office time. However, the M.R. authorities have at last ceased to enforce this rule. Junior sorters are given the liberty to attend and learn, if they wish, and they will, I am sure, be thankful for this change, as it will not only reduce their daily attendance, but be beneficial as far as increment is concerned. I know many cases in which sorters have been kept at the bottom of the tree for long periods through this, and I am sure all the M.R. postal juniors will be grateful for and will warmly appreciate the step which the authorities have taken in this matter.—I am, &c.,

L.V.

A LATE M.R. JUNIOR.

SUNDAY LABOUR.

DEAR SIR,—Kindly allow me a small space in your next issue of the TELEGRAPHIST wherein to draw attention to a subject of considerable importance to the provincial telegraph clerk, viz., "payment for Sunday labour."

It is quite time, I think, that steps were taken to secure this, and I hope our "P.J.C. Association" will not delay in taking the matter in hand. I feel confident that by properly representing our case to the Postmaster-General, and by pointing out the disadvantages of the provincial telegraphists, our case will have due consideration, and fairness will be dealt out to all.

In the majority of cases at large towns the clerks have to reside some three to four miles from the office owing to the very exorbitant rents charged for town houses (such is the case at this the Welsh metropolis), and it generally costs from two to three shillings a week for travelling. And when on Sunday duty, should it be very wet weather, as it frequently is during the winter months, we have either to face the inevitable wetting or cab it, which means three to five shillings, still, for all this, we have no compensation. I am sure, Mr. Editor, we may rely upon having your support in this our appeal to justice, and by fair and legal means gain our point.—I am, Sir,

March 13, 1884.

C.

SIR,—Can you or any of your readers kindly inform me how it is that at the majority of country offices in Scotland there are no regularly appointed telegraph clerks, thus leaving us at the mercy of the postmaster? Wishing your paper every success.—Yours, &c.,

Ecosse.

SIR,—You will, perhaps, pardon me for trespassing on your valuable space, but I feel compelled to pass a few remarks regarding the B— Post-office and its generous subscribers to your paper, which I myself have read with great interest, and consider the necessity of such a journal has long been felt. I chanced to have a short conversation very recently with a clerk belonging to that office, when I inquired of him what he thought of this month's prize sketch, and also mentioned that I had voted for No. —. He seemed to sneer at me, but evidently did not appear to have criticised the journal very much; and we must not wonder at this, when he acquainted me of the fact that five of them subscribed for a single copy.

In previous numbers it states that several subscribers have asked to make the TELEGRAPHIST a fortnightly, instead of a monthly journal. If each office subscribed with such economy as B., it is not at all likely the request will be granted, but I am pleased to find this is not the case, as the journal has had quite a different reception at the majority of large offices, almost every telegraphist treating himself to a copy.

Prior to this I had a confab with one of the female operators connected with the same office, when I was told she did not subscribe to the TELEGRAPHIST for the simple reason she was too lazy to write for it (what a ridiculous excuse to make!).

Now, sir, in conclusion, I beg to suggest that a subscription be made, and so enable each to be supplied with a copy, which I am sure is made welcome by every telegraph clerk.

I enclose my card, and beg to sign myself,

DISGUSTED.

Answers to Correspondents.

BY THE EDITOR.

SCIENTIFIC.

RAILWAY TELEGRAPHIST.—There are ten Transatlantic cables. The first cable, laid by the Atlantic Telegraph Company from Ireland to Newfoundland, was completed on Aug. 5, 1858. The second was commenced in 1865 by the Anglo-American Telegraph Company, but it broke when half laid, and was not picked up and completed from Ireland to Newfoundland until the fall of 1866. The third was laid by the same company between the same points, and was also completed in 1866. The fourth was laid by the Société du Cable Transatlantique, and was completed in 1869 from Brest to St. Pierre and Duxbury. The fifth was laid by the Anglo-American Telegraph Company from Ireland to Newfoundland, and was finished in 1873. The sixth was laid between the same points by the same company, and was finished in 1874. The seventh was laid by the Direct United States Cable Company, and was finished in 1875. The eighth was laid by the Compagnie Française du Cable Transatlantique, and was completed in 1879. The ninth and tenth were laid by the American Telegraph and Cable Company, and were finished in 1881 and 1882.

TOM TUCKER.—The chemical formula for bichromate of potash is $K_2Cr_2O_7$, which means that a molecule of B of P contains 2 atoms of potassium, 2 atoms of Chromium, and 7 atoms of oxygen. The atomic weights are $K=39.0$, $Cr=52.5$, $O=16$, therefore the atomic weight of one molecule of bichromate of potash = 295.

GOBBO.—Ohm's law is very simple.

$C = \frac{E}{R + r}$ —that is, the current equals, or is proportional to, the

electromotive force divided by the resistance. C means current; E, electromotive force; R, the internal resistance of the battery; and r, the resistance of the line. The unit of C—the current—is called an Ampère; the unit of electromotive force is named a Volt; and the unit of resistance, an Ohm. Now, an electromotive force of one volt passing through a resistance of one ohm yields a current of one ampère; here is the formula simplified $\frac{1 \text{ volt}}{1 \text{ ohm}} = 1 \text{ ampère}$. We

shall be delighted to write a popular article on Ohm's law explaining the formula and all that appears difficult in the simplest language, if we can be assured that our paper will be acceptable to a large number of readers. We must not expect the fair ones to take an interest in ohms, volts, and amperes. Love stories please them much more.

A. GRINDER.—Electricity is not a fluid. Electricians seldom speak of it as the electric fluid nowadays. Have you read Tyndall's "Heat a Mode of Motion?" We believe that electricity is a mode of motion. You ought to study the undulatory theory. We intend to publish a paper entitled "What is Electricity?" and in it we shall

endeavour to make clear the generally-accepted theory of modern physicists.

E. B. R.—You cannot do better than use a Leclanché cell for your bell. If the distance is short, have a return wire instead of earth.

E. WILLIS.—The best results with an electric locomotive show that one of two tons weight will carry fifteen tons eight miles an hour. The engine was a 25-horse power, and ran one mile over heavy grades and around sharp curves.

ENQUIRER.—There are 33 "railroad schools" in Russia for the instruction of *employés*. The schools turn out chiefly telegraphers, most of them sons of railroad *employés*. The course of study extends over three years with a two years' "practice course."

CHIN CHIN.—Japan has 4,733 miles of telegraph.

F. D'ALBERTSON.—The French Government is about to lay a further length of 4,530 miles of underground telegraph wires.

GENERAL.

N. E. R.—We have appointed Mr. Hammond, Ferry-hill, as our representative for your district. If you want copies of the TELEGRAPHIST, "train" a letter to that gentleman, and your orders will be executed without delay.

AN OLD U.K. MAN.—We are always glad to hear from Old Company's men. Thanks for your good wishes.

A. M. C.—The A B C instrument is only used at remote places, where a skilled telegraphist is not available; and the Single Needle is being supplanted by the Sounder, the king of telegraph instruments.

C. F.—Isonomy is the name of a racehorse, not a telegraph clerk.

ONE OF THE D DIVISION.—Yes; we believe that the whole affair was grossly exaggerated. We were under the impression that your division was filled with ogresses; indeed we christened it "The dreadful D"; but at the contest we had an opportunity of meeting two fair D's, and oh!—well, we are but human, after all!

CANNY SCOT.—Mr. Fergus headed his letter to us *re* the contest, "G.P.O. Glasgow," and we naturally thought he was the proper Glasgow representative. After and *not before* disqualification, he asked us to erase his name from the list of competitors; but this we declined to do because the contest was a public affair. Query: If Mr. Fergus had taken back the cup would he have been the G.W. representative then?

CHERUBINO.—Yes; you are quite right. There is at T.S. a charming little vocalist who would be worth five or six guineas a week on the lyric stage. We cannot give your her name.

J. W.—If all our reporters worked like you in our behalf, our circulation would soon be doubled.

A LINEMAN.—If Mr. Culley says the U. K. never employed the Single Needle, the celebrated engineer has made a mistake. There was a S. N. circuit to Jedburgh and Galashiels in the Edinburgh office (corner of Hanover-street), and the Needle was worked to other stations. Mr. W. Andrews, of the Indo-European Company, was the secretary.

FALSTAFF.—Mr. E. Graves, the Engineer-in-Chief of the Postal Telegraphs, was connected with the E. and I. T. Company. He is brother to the superintendent of the N. E. R. Telegraphs.

RAILWAY SIGNALMAN.—We shall always be glad to hear from signalmen, and their claims shall be considered in our columns.

Prize Sketches.

A CHEQUE for ONE GUINEA has been forwarded to Mr. A. SULLEY, of the night staff, Central Telegraph Office, London, for his story (No. 3) "Told by Telegraphy." Mr. Sulley was awarded the Prize by a majority of 26 votes.

NOTICE TO CONTRIBUTORS.

WE have several pounds' weight of Competition Sketches in hand—enough to last us many months. And we hope that aspiring young authors will wait a little before they add to our stock of unpublished MSS., or we shall be compelled to build a strong room to receive the "copy."

The next Prize Sketch will be entitled "A Ghostly Story" (in verse.)

Queries.

WILL any of "Ours" kindly inform me how I can obtain a situation as telegraphist in the Australian Colonies? Are clerks sent out from T.S. by Government? I have had six years' experience as postal and telegraph clerk.—WILLIAM KAY, 50, Spooner-road, Broomhill, Sheffield.

I AM an assistant in a sub-office, aged 21, a good telegraphist, and I have had 4½ years' experience. Have I a chance of getting on the establishment in a good office? If so, in what grade? Could I depend on receiving a salary of, say, 22s. a week?—F.

FOREIGN TELEGRAPH COMPANIES.

SEVERAL correspondents having applied to us for the addresses of one or two foreign telegraph companies, we think it will save much trouble to give a list of all the companies for the benefit of telegraphists who wish to try their fortunes in other countries:—

Anglo-American Telegraph Company, 26, Old Broad-street, London, E.C.

The Eastern Telegraph Company, 60, Old Broad-street, London, E.C.

The Indo-European Telegraph Company, 18, Old Broad-street, London, E.C.

The Great Northern Telegraph Company, 119, Bishopsgate-street Within, E.C.

The Direct United States Cable Company, 52, Old ad-street, London, E.C.

The Montevidean and Brazilian Telegraph Company, 2, Tokenhouse-buildings, King's Arms-yard, London, E.C.

The Western and Brazilian Telegraph Company, 19, Great Winchester-street, London, E.C.

Submarine Telegraph Company, 2, Throgmorton-avenue, London, E.C.

The West India and Panama Telegraph Company, Dashwood House, 9, New Broad-street, London, E.C.

The Brazilian Submarine Telegraph Company, 8, Great Winchester-street, London, E.C.

Cuba Submarine Telegraph Company, 61, Old Broad-street, London, E.C.

Direct Spanish Telegraph Company, Leadenhall-buildings, Leadenhall-street, London, E.C.

Applicants should always address their letters to the Secretary.

THE CHIEF CONSTABLERSHIP OF LANCASTER.—We take the following extract from the *Leeds Express* of January 20:—"THE POLICE CAREER OF INSPECTOR WARD.—The Leeds police will soon lose another intelligent, vigilant, and popular officer, viz., Inspector Ward, Chief Clerk at the Town Hall, who has been appointed Chief Constable of Lancaster, a position worth £250 a year. Mr. Ward, who is thirty years of age, and six feet three inches high, has been a member of the Leeds police force nine years, and has passed through the various grades to that of First-class Inspector and Chief Clerk. During this period he served with success under three Chief Constables, viz., Mr. Henderson, Chief of Police, Edinburgh; Captain Nott-Bower, Head Constable, Liverpool; and the present Chief Constable, Mr. A. B. Nott-Bower. He was one of the five selected candidates for the post of Chief Constable of Wigan when Mr. Webb, the Chief Constable of Lancaster, was appointed. He stood next to that gentleman on the list in the final voting, and now succeeds him at Lancaster. Mr. Ward had very high testimonials from the Watch Committee, the Stipendiary Magistrate, the Public Prosecutor, the Chief Constable, the Justices' Clerk, the Borough Coroner, the Town Clerk, the Clerk of the Peace, Mr. H. A. Child, Mr. William Warren, Rev. A. E. Meredith, &c." Mr. Ward is a younger brother of Mr. G. G. Ward, chief of the Direct United States Cable Company of New York, and Mr. A. W. Ward, of the "Special Wire" staff in Fleet-street. He was for a short period engaged in the telegraphic service, which, however, he relinquished shortly after the transfer. We wish Mr. Ward every success in his new appointment.

The Telegraphist

A MONTHLY JOURNAL FOR

Postal, Telephone, Cable, and Railway Telegraph Clerks.

LONDON: THURSDAY, MAY 1, 1884.

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Editorial Notes.

THE TELEGRAPHIST is six months old, and the time has arrived for us to offer to our friends and supporters an unexaggerated statement of our present position. As a literary venture our journal has met with universal approbation, but as a financial speculation we cannot record an unqualified success. We beg to remind our subscribers that to float a new journal capital has to be sunk; and the least we expected was a small interest on the money we invested. Therefore we must not be set down as greedy or avaricious if we confess to a slight disappointment at not being able to announce a miserable two-and-a-half per cent. on the capital we laid out before the issue of our first number. Our actual circulation is 5,000 copies a month (we printed 7,000 of No. 1). "Not so bad for a new paper!" many will exclaim. Granted, but anyone who has had a little experience in a newspaper office will believe that a circulation of 5,000 barely covers the actual cost of printing and publishing. The TELEGRAPHIST is no rag of a paper; it is admirably got up, as all Wyman's publications are. We could have given our readers something cheap and nasty and realized a profit, but we preferred doing the thing respectably or not at all. Ever since the birth of this journal we have given our services as director and editor, and if we were to calculate what the same amount of labour would have yielded us on another periodical we should have to record a heavy loss.

ONE of our eminent Telegraph Engineers said to us, a short time back, "Nothing can be called a success *unless it pays*. Why shouldn't the TELEGRAPHIST pay?" We echo the question, why shouldn't our journal pay? Do the clerks want an organ or do they not? An old telegraph clerk writes to us: "They (the T.C.'s) howl for a representative organ, and then, unlike any other profession or industry, they begrudge to support it." Is this true? Can it be possible than any office contains a man too mean to pay one half-penny a week towards the support of an organ established for the sole purpose of improving the condition of the British Telegraphist? We did not credit the statement of our correspondent until last week, when we learnt that a clerk at the Central Telegraph Office, because he was foiled in an attempt to sell the paper at three-half-pence, and thus injure the trade, purchased one copy for himself and seven others!!! Let us hope that this is an isolated case; indeed, we should be sorry to believe that the individual we refer to is a fair specimen of the British Telegraphist.

OUR warmest thanks are due to our representatives in this country, also to the many ladies who have encouraged us with their cheering letters. The cable clerks subscribe almost to a man; and the sincere expressions of sympathy and goodwill which we receive from all quarters of the globe have gone a great way towards the continuance of their journal. We have many energetic friends who help us *con amore*, and not for the sake of gain, and we could name offices where the number of copies sold exceeds the number of the staff. All this is very gratifying; but our supporters cannot expect us to give our services and lose money into the bargain. A little energy on the part of the apathetic ones will help us considerably during the next six months. Never let it be said that the British telegraphist cried for an

organ, and when it was offered him refused to support it. In America the operators can keep two journals going, and we know that the prospects of the English clerks will compare favourably with their transatlantic friends. We have decided to give the TELEGRAPHIST another six months' trial, and we ask our present supporters to send in their half-yearly subscriptions without delay, and to canvass all those ladies and gentlemen who have hitherto held back. We are quite willing to continue the publication of the TELEGRAPHIST even if we do not make a penny by it, but we must ask to be indemnified against actual loss.

OUR SCIENTIFIC COLUMNS.—In answer to the numerous inquiries we have received about the "Elektron" papers, we shall in future always devote a portion of our journal to technical instruction. Electro-motive force, potential and resistance, will be dealt with when we have finished with the batteries used in telegraphy.

A FORTNIGHTLY ISSUE.—We asked for 4,000 votes and we have received 46! At present the idea will have to be abandoned. Of course, we conclude that 4,954 readers are in favour of a monthly issue.

"DOTS AND DASHES BY BRITISH TELEGRAPHISTS."—We have received during the past six months a number of excellent stories in prose and verse, written by telegraphists. Many have been sent in as Competition Sketches, but the publication of these tales in the TELEGRAPHIST would extend over a period of two or three years. It is a great pity to have to reject meritorious efforts, and we think that, if we published the stories in one volume, a start might be made in the direction of a Telegraphist's Library. If one thousand of our subscribers will send in orders for copies at one shilling each, the book shall be ready within a month. Our representatives will oblige us by canvassing the clerks at each office, and sending in within a fortnight from the present date (April 25) the list of clerks who are willing to support rising talent. The sale of less than one thousand copies of "Dots and Dashes" will entail a loss; therefore we cannot put the book in hand until we know the decision of our subscribers. It ought to be a very easy matter to obtain a thousand orders for a shilling book, particularly when the authors are members of your own profession. There are no less than 1,800 clerks at the Central Telegraph Office alone. The money need not accompany the order. Our representatives will collect on delivery.

OUR NEXT COMPETITION SKETCH will be entitled "Dan Dasher's Dilemma; or, How he Defeated Delay," by Paul Changer, Y.O. This is the most amusing and ingenious sketch we have hitherto received, and we have yielded to the author's request to have it illustrated.

"THE PRACTICAL TELEGRAPHIST" will be ready on the 15th of May. The names of all our yearly and half-yearly subscribers have been inserted in the Telegraphist's Directory, free of charge. (See advertisement, page iii.) Copies will be sent direct—price 2s., boards 2s. 6d., post free.

LATE REPORTS.—We have again to direct attention to our provincial correspondents about the latest date for sending in reports to ensure insertion in the next issue of the TELEGRAPHIST. In future the paper will be made up on the 16th of each month, and published on the 25th. Reports received after the 15th will have to stand over until the following month. Provincial notices must not exceed 200 words in length.

REMITTANCES must always accompany orders for parcels of the TELEGRAPHIST. No. 2 is out of print.

NOTICE TO SINGLE NEEDLE TELEGRAPH CLERKS.—There are at the present time six postal telegraph clerks at the West London Schools of Telegraphy and Electrical Engineering, 101, Uxbridge-road, London, W., who have given up appointments on purpose to learn the Sounder instrument. When the sixpenny tariff comes into operation the demand for Sounder clerks will be very great, and the needle instrument will only be employed at remote offices where messages are few and far between. Country pupils (ladies or gentlemen) are received at the above schools on the following reasonable terms:—Board, residence, and instruction, 30s. per week.

Prize Sketches.

No. 5.—A GHOSTLY TALE.

(Founded on Fact.)

Not long ago—the date is lost to fame—
A lady fair, Miss Jones shall be her name,
Lacking an escort, ventured forth alone,
Despite a friend's entreaties, to her home.
"The hour is late." "Well, bless me, never mind;
I'm not afraid," and much of the same kind,
Expressed her courage. *She* a coward? Never!
Sufficient those who walk beneath a "beaver"!—
Thus confident, with countenance serene,
And step as stately as a reigning Queen—
She o'er the springing turf pursued her way,
Not less than Hector, equal to the fray.
Far from the din and bustle of the crowd,
Her quiet breathing seemed distinctly loud.
Nature herself was in a drowsy state
(Be it remembered that the hour was late);
So weirdly calm, and not a soul in sight.
It was, in fact, a very ghostly night;
The modest orb half veiled her creamy cheeks,
Then cast across the path some silv'ry streaks;
Heedless of these, our heroine progressed
(With sundry longings, it must be confessed),
Longings augmented by her futile strife
To quell the fears with which her mind was rife.
Whence her alarm? Her journey's end was near,
Was she afraid? Oh, no! but rather queer!
Part of her path led thro' a winding glade,
Where clustering leaflets kissed beneath the shade;
Here darker shadows thick around her lay,
And weirder grew the moon's uncertain ray;
Oft had she heard of sounds, and visions too,
And scorned them all, and sworn the tales untrue;
But times have changed—the very tales she scorned
Now thrilled her heart in tenfold power returned.
Quick was her pulse, far quicker than her feet—
Advance she must, not daring to retreat—
'Twere better far to keep the forward track,
Than, turning, feel some elf upon her back.
A few more rods, then—mercy! what was that?
'Twas quite distinct—a hurried pit-a-pat!
Half faint with dread, she turned and gazed around,
But naught transpired to solve the mystic sound;
Nothing was seen—nor was a leaflet stirred,
Mysterious silence followed what she heard;
Her throbbing heart now well-nigh burst its frame,
For, as she ran, the sound still nearer came!
Convinced the crisis must be close at hand,
Quite chilled with fear she made a sudden stand.
Who knows what visions flitted thro' her brain,
Of monstrous goblins with an impish train,
Before whose awful forms the boldest quake,
And fain would fly, tho' fixed as to a stake?
Spell-bound, quiescent as the lunar ball,
She stood and listened, nor dare move at all!
The very air seemed pregnant with the charm
That sprites exert, resistless, dire alarm;
Such fascination as the serpents cast
Upon their victims, who succumb at last.
How long she stood, how broke the magic spell,
History is silent as a tongueless bell.
This much is known—perhaps 'twas guessed before—
She moved, then ran—and gained her cottage door?
No, no, alas! the sequel has to come,
And come it did, long ere the present one.
Faster she fled, and well she might, thus driv'n,
For faster still, pit-pit-a-pat was giv'n;
Ah! what was that? Something just touched her cheek!
Then, long suppressed, burst forth a thrilling shriek!
'Tis strange, but true, the simplest trifles raise
Such wild conceptions and profound amaze;
Tho' deemed absurd, I'll stake my honour on it,
The noise was caused by ribbon on her bonnet;
A piece hung loose—the inference is clear—
She laughed, went joyous home. We leave her there.

GLAUCUS.

TELEGRAPH INSTRUMENTS, AND HOW TO USE THEM.

By ELEKTRON.

BATTERIES USED IN TELEGRAPHY.

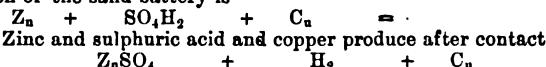
HOSPITALIER says, "We can form a fairly accurate idea of a battery by comparing it to a source of heat; for instance, the furnace of a boiler. This source produces, by the combustion or chemical combination of coal with the oxygen of the atmosphere, heat, which raises a certain volume of the products of combustion to a certain temperature.

"The amount of heat produced by the combustion will partly serve to produce a certain volume of steam at a certain pressure.

"The furnace of our boiler is nothing but the battery itself, zinc is the fuel, dilute acid is the agent producing combustion. By this combustion an electric current is generated, having a certain tension or electro-motive force, and a certain intensity, as vapour has a perfectly distinct pressure and volume."

This crude comparison is on the whole fairly accurate; it enables us to understand the often complicated phenomena connected with the battery, and renders, as it were, visible facts whose theoretical explanation often presents great obscurity.

The first battery that came under my notice was constructed as follows:—In a guttapercha trough, about 2½ ft. long, divided into compartments, were placed alternate plates of zinc and copper. The cells were filled with fine sand, over which dilute sulphuric acid was poured. This form was known as the Cruikshank or sand battery. It has not been used for many years, for it was not constant, and required refreshing frequently, or the signals became so weak that it was a very difficult matter to read off a message on the double-needle instrument. In the days when sand batteries were used, telegraph clerks often damaged their clothing with the acid. In the office cupboard was kept a guttapercha vessel with a long spout, containing dilute sulphuric acid, and many a pair of trousers has been ornamented with red spots while refreshing the batteries. It will be easily understood that the primary forms of voltaic cells were voted nuisances. In the first place, the simple cell—plates of metal dipped in pure water—yields a current for a few moments only; the oxide of zinc formed by the combination of the oxygen of the water and the zinc will not dissolve in water. The oxide sticks to the positive (zinc) plate and acts as an insulator, which prevents the zinc from further attacks; consequently the so-called current of electricity is stopped. That difficulty is avoided by adding sulphuric acid to the water, as in the sand battery; but another obstacle to the free passage of the current presents itself. If you refer to the chemical equation, you will find that when water is split up, hydrogen gas is given off. The chemical equation for the action of the sand battery is



Sulphate of zinc and free hydrogen and copper.

The sulphate of copper will dissolve in water, and, as fast as it is formed, it falls to the bottom of the cell, leaving the zinc plate free to be attacked by the acid. The liberated hydrogen was the bug-bear of the pioneers of electrical science, for this gas always makes for the negative (copper) plate, and stops the action of the cell in two ways, first by forming bubbles on the copper or carbon plate. This deposition of gas on the surface of the negative element impedes the working of the cell. It causes what is termed "polarisation." Preece says, "It is due to the fact that free hydrogen accumulating upon the copper plate behaves with respect to it in a manner almost exactly similar to that of the zinc itself"—that is to say, the hydrogen is positive to the copper. "The result is very nearly the same as though two plates of zinc were opposed to each other." Now, as the current depends to a great extent upon the contact of dissimilar metals, it is not hard to understand why the accumulation of hydrogen bubbles on the copper plate stops the action of the cell. Hydrogen also reduces the metals from their salts. ZnSO_4 , which is found in the battery just described, is a salt, and when the free hydrogen comes in contact with the zinc sulphate, the zinc is driven out and deposited upon the copper plate, and the effect is the same as having two plates of zinc in the cell. This was the only battery available in the early days of telegraphy, and it is not surprising that eminent chemists turned their attention to the voltaic battery, and laboured to discover some means of rendering the hydrogen gas harmless. Professor Daniell was the first to invent a constant battery. The cell will always bear his name, for the means he employed to prevent polarisation are so truly the outcome of real genius that even now electricians cannot help a feeling of enthusiasm and admiration springing up within them whenever the subject of the Daniell battery

A CHAT WITH CALCUTTA.

BY THE EDITOR.

THE expression, "There is nothing new under the sun," has long since passed into a proverb. History is said to repeat itself, and whenever a new discovery is announced, some one is almost certain to turn up and declare that the so-called discoverer or inventor has been working upon the ideas of others, and frequently the public mind is shocked to learn that the idol of the hour is not the genius they wished to believe him. It is well known that Watt was not the sole inventor of the steam-engine; neither can Graham Bell be credited with the creation of the telephone. Both these marvels of the age passed through a process of evolution before they reached their present state of perfection, and it would be difficult to trace the origin of any of the vast number of wonderful and beautiful contrivances which meet our eyes at every turn.

If we consult the writings of the ancients we find that many of our present theories existed in the minds of the sages of Greece and other countries, and we cannot help the thought that if a Bacon had risen in their midst and taught the great doctrine of inductive reasoning, the dark ages, as we call them, would never have existed, and railways, telegraphs, and telephones might have been accomplished facts centuries ago.

John Dalton, of Manchester, taught us the law of multiple proportions, but his atomic theory was not original. Leucippus said that the world was made up of atoms, and Democritus (460 B.C.) extended the atomic theory of Leucippus. Kanāda, of India, long before the Grecian Philosophers, proposed an atomic theory, and the finger of time could point through the long vista of ages to the original ideas which have evolved into the marvels of our own day. In our flights of imagination we often speculate upon the perpetuity of motion as demonstrated by Herbert Spencer, and apply his hypothesis to the brain. If thought is the result of molecular motion, the first man who conceived the idea of talking with others of his species in distant lands may have sent a wave wandering through space until it impinged upon a brain with which it could vibrate in sympathy, and so on until the germinal idea, if we may use the expression, evolved into perfection.

These may be wild flights of fancy, but the fact of the evolution of mechanical contrivances cannot be disputed, and in no branch of science is it so well exemplified as in the practical application of electricity.

The title of this paper will be somewhat puzzling, conveying little meaning to the uninitiated; but the telegraphist will be eager to learn how a chat with Calcutta could be possible without numerous transmissions, and we are safe in surmising that few English operators will guess that we had direct communication with India. It is always difficult for unscientific persons to grasp the fact that the time which elapses between the making contact with a telegraph-line and a battery, and the effect produced on the instrument at the extremity of the wire, is imperceptible to the senses. Telegraphists can appreciate this when they are working to short distances; but even the learned electrician, when he is in communication with distant countries, must acknowledge that he is dealing with a mighty and incomprehensible power, and give it what name he may—fluid, current, vibratory motion, force, or energy—he is as far from understanding its *real* nature as Thales of Miletus was when he first discovered the property in amber.

The last decade has seen the rapid evolution of telegraphic communication, and a glance at the maps of the various Cable Companies is sufficient to convince us that the whole of the habitable globe will, ere long, be covered with a network of electrical conductors; and in our opinion this intercommunication between nation and nation will facilitate the advance of civilisation far more than the exportation of missionaries or the introduction of rum and opium. We have often heard of the wonderful line between this country and Teheran, the capital of Persia, a distance of 3,800 miles, but we scarcely realized the fact that good signals were obtainable through so great a length of wire until recently, when we availed ourselves of an invitation from Mr. W. Andrews, the managing director of the Indo-European Telegraph Company, to make a visit of inspection. It was between seven and eight on Sunday evening, April 13, when we reached the office. In the basement of an unpretentious building in Old Broad-street we were shown the Morse Printer in connection with the main line from London to Teheran. The courteous clerk in charge of the wire, Mr. Blagrove, informed us that we were through to Emden, and with the same ease with which one "wires" from the City to the West-end, we asked a few questions of the telegraphist in the German town. When we had finished with Emden we spoke with the same facility to the gentleman on duty at Odessa. This did not satisfy us, and in a few seconds we were

is discussed. There are two cells—an outer jar, containing a solution of sulphate of copper, commonly called by telegraph clerks "blue-stone," and standing within this cell is a porous pot containing water and a little dilute sulphuric acid. The copper plate is placed in the outer, and the zinc in the inner cell. Now, I wish the action of this battery to be clearly understood, because it has never been excelled as a constant battery; and every telegraph clerk knows it by name. Indeed, many of our readers have seen the line-men refreshing the cells, and putting in the blue-stone (sulphate of copper) and sulphuric acid.

It was Daniell's object to get rid of the hydrogen gas, and prevent its deleterious effects. But the great chemist did more; he made the hydrogen do useful work, and produce a substance that was needed to keep the battery in constant action. We will now suppose that the zinc and copper plates of a Daniell cell are connected by means of a piece of wire. The sulphuric acid attacks the zinc, the radical of the acid SO_4 (sulphur and oxygen) combines with the zinc and forms sulphate of zinc, which drops to the bottom of the porous pot. The hydrogen of the acid escapes through the pores of the unglazed cell, and is on its road to the copper plate, but it meets with the sulphate of copper (blue-stone) when it reaches the outer cell, and by virtue of its property of reducing metals from their salts, the hydrogen drives out the copper of the sulphate of copper, and takes the place of the metal. You have followed the hydrogen from where it was set free in the porous cell to the outer jar; now let us make the action clear by means of symbols. The copper sulphate is represented thus, Cu SO_4 , and means

Copper Sulphur Oxygen

that this salt is made up of one atom of the metal copper, one atom of sulphur, and four atoms of oxygen $\text{SO}_4 \text{H}_2$. Sulphuric acid is made up of one atom of sulphur, four atoms of oxygen, and two atoms of hydrogen. Do you not see at a glance that if H_2 met Cu SO_4 and thrust out Cu , taking its place, we should get $\text{H}_2 \text{SO}_4$ or sulphuric acid? Well, what becomes of the Cu (copper)? That metal is deposited on the copper plate, and, as it is perfectly pure, it serves to keep up a bright conducting surface on the negative plate. No hydrogen ever reaches the copper plate. The former enemy of the electrician is now a useful servant. We want sulphuric acid in the inner cell to attack the zinc, and, as it is made in the outer jar, it passes through the pores of the inner cell, and thus the constancy of the Daniell battery is maintained. It is possible to set up a series of Daniell cells without sulphuric acid if the battery is not required immediately, for each cell is a little chemical works, manufacturing the acid for its own consumption. Professor Thompson represents the chemical action as taking place in two stages



Zinc and sulphuric acid produce sulphate of zinc and hydrogen. and then—



Hydrogen and sulphate of copper produce sulphuric acid and copper.

It will be seen that the zinc plate is destroyed and converted into a sulphate, and the copper plate actually gains by the action of the voltaic circuit. In the old sand battery, the current was enfeebled by the accumulation of hydrogen at the copper plate, and the zinc was consumed.

The form of the Daniell battery most familiar to telegraph clerks consists of a wooden trough, lined inside with a resinous composition, which prevents the action of the acid upon the wood. The trough is divided into ten or twelve water-tight compartments insulated from each other. In these cells stand porous earthenware pots, containing the solution of sulphate of copper (blue-stone), and surrounded by a semi-saturated solution of sulphate of zinc. Plates of zinc and copper are connected together by a band of copper, rivetted to each, and bent to allow the copper plate to be in one division and the zinc in the next. The coppers are immersed in the blue-stone solution with which the porous cells are charged, the zincs in the sulphate of zinc. The last copper plate is called the positive pole of the battery, and the terminal zinc the negative. To maintain the solution in a saturated condition and to prevent the accumulation of gas bubbles, crystals of sulphate of copper are placed in the porous cells. The quantity of sulphuric acid decomposed in the solution of copper is regular; the action of the acid on the zinc is regular also, and thus a constant flow of electricity is produced.

CAUTION TO LADIES AND GENTLEMEN who think of entering the Telegraph Service. Never pay for instruction in Telegraphy before you have inspected the system and seen the instruments you will have to work. Beware of clap-trap advertisements emanating from Amateurs. The WEST LONDON SCHOOLS OF TELEGRAPHY, 101, Uxbridge-road, W., are always open to the inspection of the public, and pupils are received on trial.—[ADVT.]

through to the Persian capital (Teheran). There were no messages about, the time was favourable, and the *employés* of the various countries seemed anxious to give us an opportunity of testing the capacity of this wonderful line.

T. H. N. (Teheran) said "Call Kurrachee," and in less time than it takes to write these words we gained the attention of the Indian town. The signals were good, and our speed must have equalled fifteen words a minute. The operator at Kurrachee, when he learnt that London was speaking to him, thought it would be a good opportunity to put us through to Agra, and to our astonishment the signals did not fail, and we chatted pleasantly for a few minutes with Mr. Malcom Khan, the clerk on duty. To make this triumph of telegraphy complete, Agra switched us on to another line, and we were soon talking to a native telegraphist at the Indian Government Cable Station, CALCUTTA. At first the gentleman "at the other end of the wire" could not believe that he was really in direct communication with the English capital, and he exclaimed in Morse language:—

"Are you really London?"

Truly this was a great achievement. Metallic communication without a break from 18, Old Broad-street, London, to the telegraph office in Calcutta! 7,000 miles of wire! The signals were excellent, and the speed attained was not less than twelve, perhaps fourteen, words per minute.

In former days we experimented with wires in connection with Paris, Berlin, Vienna, and we then thought it a wonderful achievement to get through to Constantinople, but this joining up of London and Calcutta, and working with such ease on an ordinary Morse Printer, at a fair speed, will appear almost incredible to outsiders, and to us, in spite of our experience in matters electrical, it borders on the miraculous.

It may interest our readers to know that the Indo-European Telegraph Company is capable of getting through an enormous amount of work. The capacity of the line is astonishing. With literally one circuit, and one instrument, messages were transmitted by this company in 1882 which realised £125,543. 13s. 10d., and the dividend declared for the last two years has amounted to 6 per cent. When the Eastern Company broke down in 1882 the Indo-European had the lion's share of the Indian messages, and the delay was always kept at a minimum.

The affairs of this enterprising body of gentlemen appear—as they deserve—to be in a flourishing condition. When we compare the absurd delays on Indian messages before English directors had the management of the wires crossing the countries *en route* with the rapidity of transmission at the present day, we think the English merchant ought to be grateful to the promoters of such a company as the Indo-European.

We have known as much as eight days' delay on Bombay and Calcutta messages. Twenty years ago we thought nothing of a telegram being three or four days on the road to or from India, and many of the messages were unintelligible when they reached their destination. Only once in 1866 did a message reach Bombay in less than twenty-four hours. Out of forty-one messages received, the shortest time occupied was two and a half days. The next shortest nine days. Twenty were fourteen days and more *en route*, one was eighteen days, and the others from ten to fourteen days *en route*.

It is with feelings of pride that we are able to record that telegraphy is the outcome of the dogged perseverance of the Anglo-Saxon race. Other nations may have added an improvement here and there, and introduced certain modifications; but the father of practical telegraphy was an Englishman, and an English company can now boast of having a little machine by means of which men's minds are able to defy the "twin monsters time and space." Distance is annihilated. Parsee and Christian can hold converse, although separated by thousands of miles of sea and land, and to return to our fancies, a brain wave generated in London, after various transmutations in a second of time, representing alternately visible and invisible energy, sets up sympathetic vibrations in the thinking organ of the Hindoo far away in the valley of the Ganges.

ELECTRIC LIGHTING ON BOARD SHIP.

By FRED. E. BUNT.

A GREAT deal has been said and written concerning the "light of the future," but probably an account of its successful introduction on board of, and comparatively easy adaptation to the peculiar requirements of the troopships of, her Majesty's Navy may prove interesting to some of your readers. Possibly many of them have never seen the magnificent vessels (five in number) which every season make a couple of trips to our Indian Empire, with relief troops, and are named respectively the *Malabar*, *Crocodile*, *Serapis*, *Junna*, and *Euphrates*. These five ships are used exclu-

sively for the Indian troop service, and are of exactly the same size, tonnage, and horse-power, and indeed the same in every other respect. The idea of introducing electricity as the illuminant on board has proved to have been a most happy one, and the success achieved with the *Malabar* and *Crocodile*, the two already fitted, has led the Admiralty to decide upon its adoption in the whole of them. The change, as may be imagined, is heartily appreciated by the crews and troops taking passage, the latter especially; as for them, the period between sunset and dawn has hitherto been a time of considerable discomfort, they having had to make themselves content with the feeble glimmer of a ship's lantern or the depressing rays of a "purser's" dip. Now all is changed, and under the direction of the Edison-Swan United Electric Lighting Company the light of the future has been made very much present. I was fortunate enough to make the acquaintance of Mr. D. C. Bate, of this company, who has superintended the whole of the fitting on their behalf, and it may interest you to learn that he is an old Exeter and T.S. telegraphist, so that you may be sure he was most willing to show me all that I wished to see, inviting me to be present at the official trial of both vessels. The system installed is the Edison-Swan incandescent, and from the perfect results which have been attained so far, there can be little doubt but that for such purposes as this it will soon be unrivalled. The dynamos are of the Edison-Hopkinson improved pattern, and the two employed are capable of sustaining 280 16-candle power lamps. The whole ship is divided into five circuits—namely, two for the upper-deck, carrying fifteen 16-candle power lamps and forty-six 10-candle power lamps on the port side, and eleven 16-candle power and forty-one 10-candle power on the starboard side. Two for the main and lower decks, each carrying eleven 16 and forty-one 10-candle power lamps on the port side, and eight 16 and one hundred and six 10-candle power lamps on the starboard, the other remaining circuit being for the engine-room, stoke-hole, and shaft-alley, and carrying fifty 16 and two 10-candle power lamps. It will be seen from this that by means of a switch-board fitted in the machine-room the whole of these circuits are under the immediate control of the engineer in charge of the dynamos, and either of the five circuits may be cut off independently of the other, and again at most of the chief officers' cabins minor switches are inserted in circuit in order that their cabins may be switched in or out. The lamps are placed in all the most convenient positions, occupying between decks the spaces between each port; and, to prevent meddling by inexperienced persons, each is protected by a wire guard securely padlocked. A number of detached lamps with flexible "leads" for use in the coal bunkers, baggage hold, &c., are also fixed ready to hand, and two yard-arm lights for use when coaling or embarking troops at night are stowed ready for hoisting on the upper deck. Each of these lights is formed of eight 50-candle power lamps, and is most powerful, the effect when lighted being wonderfully brilliant.

A particular feature in connection with incandescent systems of lighting is the absence of all danger, under ordinary conditions, from the "power." The whole current may be received through the body with very little apparent effect, and this fact must tend a great deal to diminish the sense of fear with which this new agent is regarded by a vast number. Of course it is only with the incandescent systems that this freedom from danger can be said to have yet been attained. All kinds of arc lamps must still require such an enormous electro-motive force that their use must always be attended with a certain amount of risk.

On board these ships, should the E.M.F. at any time by accident or unforeseen circumstance become too powerful for the small "leads" which branch out of the main to each of the vacuum lamps, and so introduce an element of danger, a leaden plug has been introduced which would immediately become fused and drop, cutting out the whole of the branches from the main leads, which are thicker and capable of resisting a stronger current, thus insuring them from all risk, or at least minimising the danger. The whole of the conducting wires are neatly boxed in and painted, with a narrow red streak to indicate their exact course wherever they may be led. Altogether the perfect and compact manner in which the whole has been fitted reflects the greatest credit on "our" man, and, of course, the company which he represents.

The Hire-Purchase System of Furnishing conducted by NORMAN & STACEY commends itself to all classes. It combines real economy on sound commercial principles, with strictly private arrangements, and is free from all the objectionable formalities which attach to dealers and others. No interest or fees are charged, and payments can extend over 1, 2, or 3 years. The wholesale firms embrace the best manufacturers, who have large stocks for selection, and no additions are made to the ordinary selling prices. Intending purchasers should call or send for particulars.—Office, 11, Queen Victoria-street, E.C.—[ADVT.]

THE GERMAN TELEGRAPHIST.

BY ODIN.

IN our last paper we endeavoured to present to the reader—though naturally in a somewhat cursory and incomplete manner, owing to the limits of our space—a sketch of our Russian confrère. We propose in this paper to introduce to the reader his more immediate Teutonic neighbour, who is, of course, by race, not entirely so outer a barbarian as our Muscovite friend! And yet, if it were not a little ungracious on our part to express a predilection among our friends, we should incline to the *ultra* outer barbarian. Perhaps—the reader will observe—that is owing to the writer's lamentably degenerate taste and culture since he strayed beyond the polished confines of Western Europe! Well, we shall provokingly leave the reader perplexed for an explanation of our predilection, mindful ever, with Mrs. Malaprop, that comparisons are odorous!

As the chief interest of these sketches centres, we venture to think, in a comparison of the financial status of our Continental friends with that of the English telegraphist, we shall at once glance at the ascending, but tardy and chequered, scale of our German colleague. In Germany, as in Russia, all salaries, irrespective of class, are paid monthly; and, for the enlightenment of those of our readers who are unacquainted with the German currency, we may here premise that 20 marks approximately represent the pound sterling. The exact exchange, we believe, is now about 20 marks 40 pfennig. If we may digress for a moment on this question of monetary exchange, and revert to the Russian depreciated and ever-fluctuating paper currency as affecting a number of English telegraphists employed on an Anglo-Indian system traversing Russia, we shall discover a curious anomaly. These gentlemen, who receive their salaries through a Russian local banker, never know the exact amount of their salaries for the coming month. Take, for example, the present current month. They will receive some 7s. or 8s. less than the previous month—that is, of course, in local currency. Now, extraordinary as it may appear to the home reader, this deficit is the direct result of two combined causes—the occupation of Merv by the Russians, and a recently-uttered pacific speech of the German Emperor. But, to our subject.

The young German aspirant enters the service as a *Gehülfe*, or, more particularly, *post-Gehülfe*, at a salary of 60 marks per month. After a certain period, extending generally to four years, at this salary, he is called upon to pass an examination in the theory and practice of his profession. Having successfully passed the goal, his salary is increased to 90 marks per month, or, say, £54 per annum. If at this examination the *Gehülfe* be plucked, he is, of course, relegated to his probationary position, and must wait indefinitely for a further examination; but, as a matter of fact, owing to the lengthened period of his initiatory service and experience, our friend is very rarely plucked. In truth, we are inclined to think, after a preparatory course of four years, the plucked *Gehülfe* would not be the most deserving subject of our professional sympathy! Our successful *confrère* now rejoices in the title of *telegraph-assistant*, and, we regret to say, will continue to be the bearer of his modest title for a further period of (generally) five years, when he graduates full *telegraphist*, at an annual salary of 1,350 marks, with 300 marks house-rent (*Wohnungs-geld*) allowance, or, say £82. 10s. per annum. Under these tardily-earned laurels our German colleague may rest indefinitely; for, whilst the earlier stages of his advancement are at least approximately regulated to something like fixed periods, he may, from the time of his graduation as *Telegraphist*, wait ten or fifteen years for an occurring vacancy as *ober-Telegraphist*, a position of seniority by which he is eligible for a clerk-in-chargeship and other superior appointments. As *telegraphist*, however, the salary ranges, by uncertain increments, from 1,350 to 1,500 marks, according to class of station and other special conditions. As *Ober-Telegraphist*, his salary ranges from 1,500 to 2,400 marks, but beyond the latter figure he never passes. He has now attained the maximum salary within his reach. I must here explain, however, that the 300 marks, *Wohnungs-geld*, is not a fixed and uniform allowance in all stations. It would be obviously unjust were it so, for the telegraphist, in some of the provincial stations, and in the quiet, cheaply-living principalities within the imperial system, might quarter himself in a very handsome and commodious manner upon 300 marks a year, whilst his colleagues in Berlin, on the same allowance, might be roosting up in a two-pair back, and economising the daylight and the coals. Consequently, this house-rent allowance, whilst seldom falling below 300 marks, is very considerably increased in the larger and more expensive centres of the empire.

On the completion of forty years' service, our Teutonic *confrère* may retire on what is termed a full pension, i.e., three-fourths of

his salary. A friend of the writer, still in Germany, facetiously terms this forty years' jubilee the "Dizzy Height" (*Schwindelnde Höhe!*). If a telegraphist be pensioned before completing the term of forty years' service, a deduction of one sixty-fourth part of the full pension is made for every year *minus* the stipulated forty years.

It is here necessary, and only just, to state that whilst few of our German friends could successfully compete with the great body of English telegraphists in rapidity of instrumental manipulation, they are, from their systematic and scientific training, as a body, more proficient in the general theory and practice of their profession than ourselves. The German telegraphist, *zum Beispiel*, may be called upon at any moment to take charge of, or assist in, any section of the Maintenance Department, such as line-building, underground cable-laying, the finding and repairing of line faults, &c.

In speaking of our Muscovite friend in a former paper we said that he was more or less martial in his bearing; the German telegraphist, however, when in uniform, is invariably soldierly in his bearing. But this is the natural result of his military training as a conscript under one of the severest of European disciplines, for, although he elects to follow a civil service career, plod through a severe curriculum, and pass a brilliant examination, he must serve at least the short term of military service as *Einjähriger*, i.e., twelve months. Unlike the Russian, it is now usual only on Sundays, holidays, and festivals that our German *confrère* endues himself in his martial uniform, which, by the way, is still handsomer than that of his northern colleague, more conspicuous in gold lace and facings, and especially brave in the purely military cut of the large, round, and tasseled epaulettes. We should be extremely loath to speak disparagingly of the personal equipment of our Russian colleague of the inferior classes, but considering his salary and expenses, and the fact that the Government does not provide his uniform, we must honestly confess our fear that in many cases his dress-sword would, for excellent reasons, resist the unsheathing. On the other hand, this point of our German friend's equipment is never a counterfeit, but a first-class, well-tempered, short rapier. Now, had the English company's officers been the legitimate wearers of such pretty weapons in the old days, we should certainly never have been able to withstand the temptation of pinking certain superior old humbugs whom we wot of. There is a marvellous and electrically delicate power of incentive in the application of so fine and penetrating an argument, more especially if unexpectedly and posteriorly applied.

Our German *confrère* having the option, save on certain specified occasions, of wearing civil or uniform dress, the former has largely obtained during the past decade, owing, no doubt, to the fact that the telegraph service, at the close of the French War, was opened as a reward to soldiers who met the educational standard, and who, we may venture to state, had had enough of Mars and his pomps to last them a lifetime. An English telegraphist entering for the first time the *Apparatsaal* of a German telegraph station, cannot help but be impressed with the extreme cleanliness and orderliness of the apartment, the neat and methodical appointments of the instrument-tables, and the marvellous quietness and smoothness of the general routine. We are here speaking, exemplarily, of an important transmitting station in Northern Germany, in which the writer passed some two years very pleasantly with his German colleagues. As a rule, their universal single-current keys are adjusted to the finest possible point compatible with the perfect making and breaking of the current, and their rapid manipulation is consequently almost inaudible. The noisy Hughes generally enjoys its own special apartment, or suite of apartments. The first fifteen minutes' duty of the day staff, commencing at 8 a.m. during the six summer months, and 9 a.m. during the six winter months, is a noisy period of general relaxation and conversational intercourse, which we used to observe with equal amusement and pleasure. Each telegraphist is responsible for the adjustment and perfect cleanliness of his instrument, and a small drawer beneath the instrument contains everything requisite for the performance of this preliminary part of his duty. During its process the traffic must wait, and the *tout ensemble* of the staff is naturally more animated than at any other period of the day. Our German *confrère*, whilst brushing, dusting, polishing, and adjusting, is blowing a cloud of smoke from his fragrant cigar, gaily chatting, laughing, and jesting with his neighbours, and, in fact, is as characteristically hilarious as his English *confrère* is phlegmatic, before settling down silently to the serious occupation of the day. The German, we know, is proverbially a model of method and system, and these traits in his character are especially prominent as a telegraphist.

In the early days of our acquaintance with the German telegraphist we were not a little puzzled as to the purpose and nature of a small bottle of some light-coloured liquid, which our friend in-

variably every morning placed in the instrument drawer above-mentioned. We were curious as to the particular purpose of this never-failing quantity in his *method*, and inquired of our nearest neighbour—a good-humoured, moustachioed little veteran of three campaigns, and whose gala uniform blazed with a dozen medals and crosses. “Ach! mein lieber,” he replied, “wissen sie das noch nicht? Das ist ein schnäpschen zum meinem zweiten frühstück.”* We were satisfied, and had ourselves learnt ere long to appreciate the appetising qualities of a schnaps at luncheon.

In the greater number of the German provincial stations smoking is generally at all times permitted. This permission, however, remains within the personal discretion of the clerk in charge. The German station is always provided with comfortable sofas—a provision more especially intended for the comfort and relaxation of the night staff. On our first observation of this very pleasing arrangement we observed to a German colleague that the *Stationschef* must be a very liberal and considerate officer. But here again the method or system above-mentioned was further illustrated. My friend took me by the buttonhole across the room and pointed out a printed official paper on which were minutely detailed the requisite regulation furniture and appurtenances of the station, down to the fireirons.

As a rule the German is very considerably in advance of his northern colleague in point of speed, expertness, and neatness, but he is at the same time very considerably behind the English telegraphist in the two first-mentioned qualities. From our own personal observation of several Berlin circuits the ladies on day duty in the capital are much faster operators than the night male staff. In our own experience we have found faster manipulators and receivers on the Hamburg, Bremen, and Frankfurt circuits than those engaged on the metropolitan termini; and this fact has struck us rather forcibly as a curious parallel to our earlier home experience. We may be pardoned a slight digression in order to explain ourselves. We have had a fairly extensive experience on Morse, Hughes, and Wheatstone, in the chief English and Scottish telegraphic centres, and we are not, we trust, biased in any opinion formed from such experience. We have been engaged on metropolitan lines from MR, LV, SF, NT, GW, EH, DE, &c., as well as on a “racing” and “relief” staff in one of the old companies, and we have not found the metropolitan staff, “all round,” as proficient as their colleagues of the chief provincial centres. Now, many of our readers may take exception to the writer’s opinions and statement on this point; but we can only honestly protest our good faith and an unprejudiced opinion, built upon our own humble experience and observation. We shall be told that a metropolitan carried the palm in a recent contest at Uxbridge-road. Admittedly and deservedly, we reply; and, we might add, the exception proves the rule. But we must beg our readers to accept our assurance that nothing is remoter from our intentions than to raise a contentious spirit on this point; that we are speaking of the metropolitan staff as “all round;” that we are quoting an incidental home parallel to our German experience, and that, perhaps, since the blue mirage of the chalky cliffs waned from the writer’s receding view *vous avez changé tout cela!*

We regret our inability, from our own personal observation, to present our readers with a description of the Central Telegraph Station at Berlin. Permission to go over the whole station was courteously offered to us during a hurried visit to the Prussian capital, but time did not serve. If the central staff at Berlin be compared with that of St. Martin’s in point of number and set, respectively, against the populations of the two capitals, the Prussian, which numbers 800, is comparatively the larger staff, as it represents a population counting only one quarter of that of our own metropolis. The ordinary full day staff (instrumental) at the Berlin central consists of 300 *Herren* and 40 *Damen*. It will be seen, therefore, that the softer influences are not here so preponderating as at St. Martin’s.

Now, despite the lower and extremely slowly-ascending scale of salaries in Germany and Russia as compared with the English establishment, the social position and general status as a citizen of our Teutonic and Muscovite *confrères* is much superior to our own. To explain this fully would lead us into general questions, the discussion of which the limits of this paper forbid; but we may briefly say that the conditions are very materially different. The Russian and German telegraphist has *always* been a civil servant of the Crown. Except in the larger continental centres, his income does not compare so unfavourably in the absence of the organised and highly-paid artisans we find throughout the United Kingdom. He lives at half the cost necessary to support the English telegraphist; and lastly, there is a certain professional *caste* in his occupation entirely absent in the English service. Indeed, its existence would

be impossible under the altered conditions of the social and political economy of our high-pressure island.

We may mention that a uniform system of duties, with the exception of stations not permanently open, now generally obtains throughout the German States, Austria, and Russia. The periods of a duty are arranged in what are commonly called *jours*, two of which ordinarily comprise a week’s service. For instance, the first portion of this tour is from 2 p.m. to 9 p.m., resuming the next morning from 9 a.m. to 2 p.m., and again on the same evening from 9 p.m. till the following day at 9 a.m., thus completing the tri-sected cycle of twenty-four hours, and followed by twenty-nine free hours. A further arrangement is, of course, necessary in giving free nights, consequent on the lesser requisite staff for night duty, Sunday, &c. This system, wherever practicable, has the special advantage of not interfering with the dietary habits of the telegraphist. Whether he be on morning, afternoon, or night duty, he breakfasts, dines, and sups at home; and it has the further advantage of placing the fore or after part of the day always at his disposal for recreation.

We have not, in this paper, particularised the speed of the German telegraphist, and when we state that he is, *generally*, more expert than his Russian colleague, we must explain that circumstances, not any superior personal abilities, make him so. Indeed, we should say that he is not a whit faster than his Russian *confrères* in St. Petersburg, Moscow, Odessa, Riga, Warsaw, &c.; but, then, if we except these cities and a few other transmitting centres of considerable, though lesser, importance, the Russian sees no occasion or incentive for the attainment of a high speed of working, and he naturally lacks all spirit of emulation where the object to be emulated is beyond his immediate ken. We must remember, also, that the further north the slower the world wags.

THE AGE OF INVENTION.—This has been justly termed the “Age of Invention,” and one has only to turn to some of the daily papers now to discover the wisdom of the man who so termed it. The death of his Royal Highness the Duke of Albany, which, by its suddenness, has caused all classes so much grief, has again given opportunity for that much-to-be-regretted feature of newspaper management, and reports minute and circumstantial in their details as to various subjects connected with his death have appeared in some of the leading papers only to be contradicted in the next issue, and reported as “grossly exaggerated” and “without foundation.” Her most Gracious Majesty the Queen was reported to have “fallen down” on hearing the sad news; the grief she naturally felt was described almost to the number of “convulsive sobs” she gave, and with a rude and unfeeling regard for the sacredness of the occasion all the minute details of sorrowing affection which may have been supposed to have occurred were entered into in order to furnish a little excitement to a minority of morbid minds. Her Majesty, by her recent work, has shown herself a true woman, and her motherly feelings must have received such a sudden and unexpected shock at the death of her youngest son that every true Englishman, whilst sympathising deeply with her, must surely feel it an unwarrantable piece of impertinence, let alone unfeelingness, to wish to pry into her sorrows. Yet such men (as the Queen herself has informed us) as “irrepressible reporters” are still extant. They could not leave her Majesty alone for her picnic—they cannot leave her alone in her grief, and, because they are not able to give the sad details in all their truthfulness of the reception of the unexpected news, they must needs fabricate stories which can have no other effect than that of causing fresh sorrow where sorrow is already heavily laid. The old adage that “bad news travels quickly” is again exemplified, and the “telegraph” was requisitioned for one of its saddest uses; but we are confident that the whole body of manipulators in this kingdom will join with us in expressing the hearty sympathy we feel for our Sovereign in her affliction, and the even still deeper sympathy we, in common with all our countrymen, must entertain for the young widow.

THE late Mr. CHARLES READE, author of “Never Too Late to Mend,” said of the Senior Principal of the West London Schools of Telegraphy and Engineering:—He is a devoted lover of science and a public writer on scientific subjects. He is a Telegraphist of long standing and well able to teach the use of the various instruments. I happen also to know what high prices and unfair advances are often obtained from pupils in telegraphy, especially from females; and I think it a boon to persons of that sex, and to the public, that the Principal of these Schools offers to teach telegraphy, as other arts are taught, in a straightforward, honest way, and on fair terms proportioned to the advantage any able, industrious pupil can derive from so able and zealous an instructor. Send for a Prospectus and the Opinions of the Press to the PRINCIPALS, WEST LONDON SCHOOLS OF TELEGRAPHY AND ELECTRICAL ENGINEERING, 101, Uxbridge-road, W.—[ADVT.]

* “Ah! my dear sir,” he replied, “do you not know that yet? That is a little drop for my luncheon.”

Literary Notes.

CHARLES READE, D.C.L.

THE last of the great novelists of the Victorian era is dead. The noble-hearted champion of suffering humanity is no more. Charles Reade, in whose hands the pen was indeed mightier than the sword, after fighting bravely for nearly half a century against tyranny and oppression, has laid down his arms for ever, and his noble dust now rests peacefully by the side of his beloved friend in the marble tomb he erected for himself and her in Willesden Churchyard nearly five years ago. Not only has a great master of fiction passed away, but a veritable angel of charity has gone from our midst, leaving behind him many who have long looked to him for help and comfort to bitterly lament his loss.

Mr. Reade had been a great sufferer for the last twelve months. The agony he daily endured for some time previous to his departure for Cannes was quite enough to cause a less selfish man to think only of himself and his own ailments; but Mr. Reade, in the brief intervals of relief from pain, and often when he was unfit to leave the house, found time to visit the sick, giving them words of consolation, and improving their condition by substantial acts of kindness—when he was hardly able to rise from his bed, and needed all the comforts to be derived from furniture specially adapted for invalids, he sent his own chair to a poor person who was afflicted with spinal disease; and a little later, after he had despatched his *protégée* to the seaside (paying liberally for the best medical advice and all incidental expenses), he had the chair transferred to a lady who was suffering from an attack of bronchitis. When Mr. Reade could hardly get upstairs through shortness of breath, he visited the lady in question, made her room cheerful with flowers, and ordered his cook to supply her with whatever delicate nourishment she required. At about this time a young actor, almost unknown to him, died suddenly. Mr. Reade was told that the friends of the deceased lived in the neighbourhood of Shepherd's Bush. That was enough. He started on his errand of mercy at once, and soon added other names to the long list of those who will feel his loss with poignant grief this day.

After his visits of charity to distressed gentlemen and gentlewomen, bank-notes and gold pieces would often be found on the mantelpiece or under a book, for Charles Reade never patronised his *protégés*.

His exquisitely sensitive nature made him respect the feelings of his less fortunate brethren, and whenever he gave away money he fumbled about in his pockets, and appeared ashamed to offer that which so many "charitable persons" never part with unless they are certain of a line in print.

His return from Cannes, in a dying state, cast a gloom over the neighbourhood of Shepherd's-bush, and every day, for the past fortnight, persons might have been seen leaning against the wall of St. Stephen's Church, gazing anxiously at the window of the room where a noble spirit was preparing for its flight—possibly whispering prayers for the recovery of the occupant.

It was hard to feel that nothing could be done to aid one who had spent his life in alleviating the sufferings of others. One lady who had experienced many kindnesses at his hands said in our presence that she was willing to offer her "life's blood" if by its transfusion into his veins he might be retained here a little longer.

The night before he died one of the many who loved him was admitted to his room, in the hope of hearing his kind voice once more, but it was too late. The only words distinguishable were spoken in another tongue. "*Me voici*," he once exclaimed, and then lapsed into silence.

W. L.

FUNERAL OF MR. CHARLES READE.—In the presence of a considerable number of mourners, the remains of Mr. Charles Reade were yesterday laid to rest in Willesden old churchyard. The funeral procession, which consisted of an open funeral car followed by five mourning-coaches and a few private carriages, started from the residence of the deceased, 3, Blomfield-villas, Shepherd's-bush, at a quarter-past 11, and reached Willesden at half-past 12. Chief among the mourners were Mr. Compton Reade, brother of the deceased, Mr. Charles Liston, Mr. Arthur Reade, the Rev. Compton Reade, Mr. George Woodroffe, Mr. Frank Hedges, Mr. Malcolm Drummond, Mr. John Coleman, Mr. W. Lynd, and Mr. E. C. Norman. Flowers covered the coffin, which was of polished oak, with brass mountings, and had upon its lid a shield-shaped breast-plate bearing the following inscription:—"Charles Reade, dramatist, novelist, and journalist; born 8th June, 1814, died 11th April, 1884." The service was read by the Rev. Charles Wharton, vicar of the parish.—*Standard*, April 16th.

T. S.* Items.

CENTRAL TELEGRAPH LADIES' WORK SOCIETY.—It may be interesting to some of our readers to know that the above society has been formed for the purpose of making clothing for, and rendering pecuniary help as far as possible to, the out-cast poor at the East-end. The society has been in existence only since the latter part of November, 1883, and has so far been a great success; beginning with forty members, it now numbers a hundred and ten, while the donations of money received during the first quarter amounted to over £7, besides considerable contributions of left-off clothing. Each member contributes not less than a penny per week. Large parcels of comfortable garments have been made and sent to the Mildmay Mission, Bethnal-green, on three different occasions; two good donations of money have also been given to the Mission. Pecuniary help has also been rendered in several cases that have come under the more immediate notice of the promoters of the work. Hitherto the society has been almost entirely composed of the female members of the staff, who have helped nobly; but, doubtless, there are many of the male staff who would be as glad to give as the society would be to receive their contributions. By the kind permission of the matron, information may be obtained in Room 102.

ANOTHER venturesome young blood has just deserted us for foreign service. W. Chilton Snart (son of the veteran telegraphist, late of the H.M.K.) sailed on the 2nd inst., in the s.s. *Mondago*, for Rio de Janeiro. During the four years he has spent at T.S., his genial nature and social talents have rendered him a favourite with his compeers; while so carefully has he attended to his work, that extra duty for an error has never once been imposed upon him—a circumstance which will put some of us on our metal, and should augur well of his future connection with the Brazilian and West Coast Company. Let it be remembered that each departure of this sort is a new ramification in the meshes of our common fraternity, and none will refuse a kindly thought for those who mentally carry away a real, living, bustling, and prosaical Saint Martin's out into the far and curious corners of the world.

ELECTRIC B. AND A. CLUB.—The first long distance race of the E. B. and A. C. was successfully carried out on April 19, on a road course commencing at the Green Man, Putney, and taking a triangular course of a mile in length, which had to be compassed five times. The spectators mustered in strong force, and were rewarded by seeing a lot of hitherto hidden ability display itself amongst the runners. The performance of the winner was a surprise, but not the less popular, and was also a very meritorious one, as he ran the five miles in 28 min. 11 sec. Ives also did a very good time for a youngster, as he got home in 29 min. 31 sec. Honeyset, the third man, walked in. Only six runners passed the post, the other prominent ones retiring when they saw pursuit was hopeless. Details:—Runners, H. G. Reed, scratch; F. Barfield, W. Braybon, H. Ives, A. Knowles, J. F. Gilliver, W. Cobb, O. Sturman, W. Plumer, F. Benson, 30 sec.; L. H. Honeyset, J. G. Hopgood, C. Mitchell, W. Webber, Avery, A. Bathurst, J. McGuire, 60 sec. start; A. F. Bullard, G. H. Twyman, 90 sec. start. The limit man was scratched at 5.16 p.m. by the starter, Mr. W. Webb. At one mile, Hopgood and Twyman were leading, closely followed by Bathurst, Honeyset, Bullard, Gilliver, and Knowles. At two miles, Knowles was leading, followed in order by Sturman, Honeyset, Bathurst, Ives, Barfield, and Bullard. At three miles, the order was Knowles, Ives, Barfield, Reed, Bathurst, and Braybon. The leading trio kept their respective places until the end, Knowles gradually widening the distance until the end. Result:—1. Knowles (30 sec.), time, 28 min. 11 sec. 2. Ives (30 sec.), time, 29 min. 31 sec. 3. Honeyset (60 sec.), time, 30 min. Sturman (31 min. 35 sec.), Bullard (32 min. 32 sec.), J. McGuire (39 min. 15 sec.). The presentation of three handsome prizes, and tea, concluded a very pleasant meeting.

THE TELEGRAPH AND THE VOLUNTEERS.—Six men of the Field Telegraph Company (Central Telegraph Office), 24th Middlesex R.V., accompanied the marching column to Portsmouth, leaving Waterloo at 8.30 a.m. on Good Friday. They detrained at Rowland's Castle station, and marched to Idsworth House (head-quarters of Colonel Moncrieff), from which place a telephone-wire was laid by them to Windmill Hill, a distance of two miles. The wire was in working order by 2 p.m., and remained open until 9.30 p.m. During that time numerous messages were transmitted to headquarters by this wire, which gave every satisfaction. Windmill Hill was the head flag signalling station. It is worthy of note, that this was the only wire ever laid by Volunteers, and, judging by the interest centred in it, and the great success attending the work, it will, no doubt, prove an important factor in all future movements of the kind. In case of war, this company can render

invaluable laid, as the very pick of the office are enrolled in its ranks, under the able command of Captain J. J. Blanchard, also of this office. After attending the Review on Easter Monday, the detachment, which was in charge of Corporal Hoppood and consisted of Privates Reading, Dawe, Fry, Kensington, and Davis, returned to London, which they reached at 8 p.m.

Provincial Items.

BIRMINGHAM.

THE activity of the department in this old Black Country emporium, in anticipation of the reduced tariff, has been marked by a liberal supply of duplex and quadruplex apparatus, and it is a matter for regret that their full employment has been postponed. The sixpenny tariff means the maintaining of a supernumerary staff for some time beforehand, the sinking of a vast amount in plant, and the extension of centres, together with a decrease of revenue. It is no wonder, then, that the Exchequer hesitates to commit itself to this grave step under its present difficulties; but still the desideratum is such that commercial enterprise will certainly step in and decide either that the tariff must be conceded or additional facilities afforded to private wires. We may safely prognosticate that the present Parliament, unable to resist this pressure, will be bound to see the institution of the sixpenny telegram an accomplished fact. As to the fears in some quarters that the cheapening of telegrams will supersede the penny post, it vividly recalls the fears of the canal companies that railways would supersede their systems, or the tram the bus; whereas, we find the traffic so far from decreased that it is doubled, and, in some cases, has grown out of all proportion to the capacity of crowded thoroughfares.

THE alterations and extensions, then, of the central office here, which have been in hand some time—the latter being necessarily, however, of a very limited character, owing to the very confined area at the disposal of the department—must be looked on as auguries of an increased revenue to the postal and telegraph systems. Still, practically, the work of extension is at a stand, it being very apparent that, with the greatest economy of disposal, the space afforded by the present site will do very little more than relieve the crowded grouping of the various instruments and departments.

THIS difficulty has very much exercised official consideration, but facilities for business are not the only matter which has had to receive the attention of the Postmaster. It has long been the undisguised will and intention of the latter to see his departments keep pace with the commercial and political leading of the "Midland Light"; and this solicitude is now about to take the shape of securing as much attention to the personal comfort of each individual officer, with regard to sanitary arrangements, as that bestowed upon the business capacity of the bureau. Accordingly, the adjoining premises to the present central office have been under negotiation, and have advanced to a favourable issue. By the arrangement contemplated under this acquisition, the old objection of the messenger department being on the same floor will be removed, and the grouping of the circuits and desks will be so adjusted as to afford the best security against draught, by bestowing a more careful consideration upon the pneumatic exigencies of the office. In place, then, of the disappointment created by the temporary postponement of the reduced tariff, we shall have the satisfaction of seeing ourselves in more homely and enjoyable surroundings, so that when the time for "hard graft" arises, the old ardour of emulation will have been carefully fostered by the absence of a most paramount grievance.

BRADFORD.

FOOTBALL (Bradford Postal Telegraphists v. Leeds Postal Telegraphists.—On March 19, in splendid weather, on the ground of the former, in the presence of a considerable gathering of spectators. Leeds kicked off, and Gibbard was soon busy for Bradford, who worked the ball to the centre, where a packed scrimmage was formed. On the ball coming out, a mull by Parratt let the Leeds men into Bradford's twenty-five. R. Scott, however, secured the ball, and relieved his side by a splendid run through the Leeds' backs, the whole length of the field, planting the ball between the posts. No goal resulted. After the kick-out the visitors rushed the ball to the home "25," and a scrimmage on the goal-line resulted in a try, obtained by Naylor near the corner flag. The kick at goal was a failure. Soon after, Parratt made a smart run to the visitors' "25," where he unselfishly passed to W. Scott, who cleverly eluded the remaining backs, gaining the second try for the home team; again no goal resulted. Score at half time—Bradford two tries, one dead ball; Leeds—one try. On the change of ends it was soon apparent the visitors were clearly overmatched at all points, Brad-

ford running try after try in, and at the call of time the score stood—Bradford, one goal, six tries, one dead ball to the visitors' one try. For the home team, Firth, R. and W. Scott, Parratt, Steele, and Emsley were perhaps the best, but all worked well. For the visitors, H. Naylor, W. Foster, and T. Willey were most conspicuous.—Bradford Postal Telegraphists v. Leeds Telegraphists.—The return match between these rival teams was played on the ground of the latter on Monday, March 31. On this occasion the Leeds men put a strong team in the field, in the hope that the previous defeat would be wiped out; but after a fast game only succeeded in making a draw. The Bradford men were minus three of their best backs. Score—Leeds, one try, four minor points; Bradford, one try, three minor points.

BRADFORD has at last been made into a head office of the engineering department—the new inspector, Mr. Alexander Moir, late of Edinburgh, and his staff, having temporary offices in the basement of the present post-office in Piccadilly.

THE purchase of the site for the new post-office has at last been completed, the deeds having been signed, and the money (£39,000) paid over to the Corporation by Mr. Zaccheus Brooke on behalf of the Treasury. It is hoped that building operations will commence at once, as the present building has been found to be inadequate for the accommodation of the various branches of the department for some years back.

THE Bradford Telegraphists' Bicycle Club had their first outing this season under Captain Lloyd on Good Friday, when they had a most enjoyable run to Skipton, arriving back home about 10 p.m., feeling all the better for their outing.

CARDIFF.

THE subscribers at this office are unanimous in their approval of a fortnightly issue of this paper, which it is thought will be a great improvement, as, through the monthly publication, reports are necessarily much after date. We heartily wish the editor every possible success, and hope that those clerks who have hitherto withheld their support will now make it convenient to pull with the majority, by becoming subscribers to an organ, the special object of which is the advancement of their own interests.

NOTHING of importance has occurred at this centre during the past month, but there is much speculation as to when the reduced tariff will come into force, and what changes will be necessitated thereby. Several new trunk lines are being laid; but, beyond this, we are in the dark as to what preparations are going forth.

THE annual picnic, which is fixed for an early date in June, is now occupying the minds of some of the ladies of our staff, who, assisted by a few of the male clerks, are making the necessary arrangements for this usually very enjoyable outing.

CHESTERFIELD.

THE TELEGRAPHIST is much appreciated here. We shall be pleased to contribute fortnightly.

WE are deeply grieved to have to record the sudden and unexpected death of our respected postmaster, Mr. Smithson, whose kindness and geniality were widely known and felt by most of us. The circumstances under which he was so peculiarly cut off from our midst made his loss doubly felt. The previous day he was apparently in his usual health, attending to official matters, chatting in his usual hearty way, and speaking of feeling so much improved in health, &c. He was seized with an epileptic fit early next day, and never recovered, expiring at two in the afternoon. His funeral took place on Monday afternoon in the presence of a large concourse of friends and sympathisers, including clerks, sub-postmasters, and postmen, a procession being formed in front of the hearse composed of about sixty persons. The funeral ceremony was very impressive and effective. It was conducted by Rev. A. T. Field, rector of Holy Trinity, and Rev. T. C. Brodberry, curate-in-charge at Stonegraves. The grave was covered with several beautiful wreaths, one splendid wreath sent by the staff occupying a prominent position in the centre of the grave, and was admired by hundreds of persons who visited the spot during the afternoon. Deceased leaves a widow and six children. The chief clerk, Mr. Whomersley, is for the present officer in charge.

DERBY.

(MIDLAND RAILWAY.)

FOOTBALL MATCH.—On Saturday, Feb. 22, a football match, between a team of Operators and one selected from the Superintendents and Relief Staffs of the department, was played at Borrowash, in fine weather. A very good game took place, resulting in a win for the Superintendents' team by four goals to one. For the winners, Messrs. Lewsley, Allen, and Daykin, as forwards, played in good style; Messrs. Fletcher and Bladon being very formidable as backs. For the Operators, Messrs. A. and C. F.

Baker, Elsey, Simms, and Blood (goal) played excellently. After the match, the players and a few friends sat down to tea at the Noah's Ark Inn, and spent the remainder of the evening in a most enjoyable manner. Mr. J. A. Denman occupied the chair, and was ably supported by Mr. A. Anderson in the vice-chair. The harmony of the evening was greatly contributed to by the rendering of songs by the following gentlemen, Messrs. Anderson, Denman, Lewsley, Townsend, and Beighton.

EDINBURGH.

THE annual assembly held in connection with the telegraph department here took place on the 26th March in the Society of Arts Hall, and proved one of the most successful yet held. Dancing was kept up till a late hour, and the music, which was supplied by Mr. G. Turnbull, was well selected and excellently played.

ELECTRIC GOLF CLUB.—The spring prize meeting and medal competition took place at Musselbro', on April 18. Our Superintendent, Mr. Wood, again carried off the medal, and the first prize along with it. The scores of the first nine competitors were very close, and showed good play. They were Messrs. Wood, J. C. Robertson, J. Watson, J. Richardson, A. J. Wilson, H. Knight, A. Whyte, R. McNab, and D. McIntyre. This club, which seems to be the only one in the Telegraph Service, had a most enjoyable outing on the "Links" at the seaside, the weather and all other conditions necessary for the national game of Scotland being at their best.

THE third Inter-office Football match (Association) between Glasgow and Edinburgh was played on Saturday, April 12, at Kinning Park, Glasgow, kindly lent for the occasion by the Glasgow Rangers' F.C. The weather was all that could be desired, and the ground in capital condition. Quite a host of the Glasgow male staff turned out to witness the game, with a sprinkling of the fair sex. The opposing teams were very evenly balanced as regards weight; the Edinburgh men had, if anything, the pull of their opponents in speed, but lacked combination, especially in the first period. The chief source of the Glasgow strength lay in the full back division (MacGinness and MacGregor), both of whom played up in rare style, again and again preventing Edinburgh from scoring by sure tackling and good, strong kicking. Some smart work was done by Sutherland and Featherstone on the left wing. The other forwards did not appear to play together. At 4.10, against a slight wind, Miller, for Edinburgh, kicked off. The ball was at once sent up towards the Glasgow goal, but the opposing backs soon returned it to midfield. Several corners fell to Edinburgh, and their opponents were pressed severely several times; but, so good was the defence, that they were unable to improve matters. Towards the middle of this half, Edinburgh fell away considerably, Glasgow having a couple of corners. The game was very equally contested till the half-time whistle blew, no point having been gained by either side. On changing ends an alteration was made in the Edinburgh team, Phillips going forward, the vacant place at back being filled by Fisher. The effects of this change were soon apparent, as Phillips, a few minutes after the ball was re-started, took it nicely down the field, and then passed to Hobson, who in turn "centred," enabling Richardson (right wing) to score the first goal, amid great excitement and enthusiasm. On the ball being again set in motion from the centre of the field, the Glasgow men played up with more dash, and in turn assailed the Edinburgh goal, well nigh scoring, the goal-keeper only managing by jumping up and putting out the ball with the tips of his fingers. Not long after this Edinburgh went right away for their opponents' goal, the ball again going under the bar from Richardson's foot, goal No. 2 being registered. No further scoring took place on either side, and the Edinburgh team at the call of time came out of a well-contested game victors by two goals to nothing. For the winners the most prominent were, perhaps, J. Richardson (right wing), Hobson (left wing), Phillips (centre), Ritchie (half back), and Prescott and Fisher (full backs). Teams.—Glasgow:—Malcolm, goal; MacGinness and MacGregor, backs; Smith and McLachan, half backs; Sutherland, Featherstone, Stevens, Scott, McLardy, and Denny, forwards. Edinburgh:—A. Whyte, goal; R. Phillips and Prescott, backs; Kinnear, Thomas, and Ritchie, half backs; Hobson, Nisbet, Miller, Fisher, and J. Richardson, forwards. Umpires:—Glasgow, Mr. T. Preston; Edinburgh, Mr. W. Smith. Referee, Mr. A. Kettles. The Edinburgh players were entertained to dinner by their Glasgow friends, the chair being occupied by Mr. A. Kettles, assistant-superintendent,

Mr. T. Hobson, captain of Edinburgh team, doing croupier duties. A very pleasant couple of hours were spent with speeches, songs, &c., after which, at 8.50 p.m., the Eastern Eleven left by express train for Edinburgh.

HASTINGS.

THE fifth annual outing of the staff took place on Good Friday, under very favourable circumstances. Starting at 9.30 a.m., in Wagonettes, Sandhurst was reached, after a most enjoyable drive, at 12.30 p.m. Various amusements, such as "Chopping" (Mutton) "Binoling" (Foot), and "Napping" were indulged in until the real sports commenced. A 150-yards handicap secured 24 entries, out of which number 22 faced the starter (Mr. Webb), and a most exciting final resulted in G. French (20 yards' start), taking the prize, a handsome gold pin, presented by Mrs. Hulburd. The half-mile handicap was won by E. Foster, who just beat "Little" Eldridge on the post. Prize—silver chain, presented by the postmaster (S. Hulburd, Esq.), who acted as judge. Mr. Avard was handicapper. A cricket-match between sides chosen by Mr. Webb and Mr. Duke resulted in a victory for the former's team. An interesting match between the postmaster and Mr. Balding was drawn, neither party having scored! An excellent spread at "The Swan" was served at 5.30 p.m., and full justice done to it. The postmaster presided, supported by F. Bulmer, Esq. (R. and A.G. office), and Mr. Avard. Mr. Webb occupied the vice-chair. The toast of "The Queen" was drunk with musical honours, as was also "The Chairman" and "Mr. Avard." A very harmonious evening was spent, and the return journey was made, Hastings being reached at 1 a.m.

HULL.

CIVIL SERVICE CRICKET CLUB.—At the general meeting held on the 22nd ult. it was decided, after considerable discussion, to carry on the club, the prospects of the members as regards getting practice being better than last season. The following officers were then elected:—President, J. A. Duesbury, Esq. (postmaster); vice-president, B. Thrall, Esq. (chief clerk); treasurer, Mr. Snowden; auditors, Messrs. Wright and Wells; committee, Messrs. Power, Clack, Edwards, Shores, Crookes, Heaton, and M. E. Brown; secretary, Mr. C. Croft. The old field at Haworth Arms has been taken, and practice will commence at once. The feeling at this office is against the TELEGRAPHIST being issued fortnightly. We suggest that the scientific matter which appeared in the first number should be again commenced.

IPSWICH.

YOUR interesting journal is well received at this office. We are delighted with it. It is taken and read by every clerk, from the superintendent downwards, and is much appreciated by all of us. With regard to the proposed fortnightly issue, we hope the Editor will be successful in receiving the desired number of post-cards, for we are all anxious to receive the TELEGRAPHIST twice a month.

OUR Postal and Telegraph Cricket Club is no more. At a meeting held under the presidency of the Postmaster, Mr. J. Prior, on March 26, the question of prolonging the existence of the club was raised. There were few members present—a significant fact, denoting the little interest taken in the question. The meeting was very tame, and after talking for about fifteen minutes, it was unanimously agreed by those present that the club should be broken up. It was also decided that the cricket things should be disposed of, and that the proceeds of the sale should be divided between the East Suffolk Hospital of this town and the Convalescent Home at Felixstowe—two noble and deserving institutions.

LEEDS (G.P.O.).

FOOTBALL.—Leeds v. Bradford (Telegraph Clerks).—This return match took place at Leeds on March 31. BD kicked off. A series of well-contested scrimmages took place in neutral territory; BD gradually worked the ball to within a few yards from the LS line, when Steele, by an injudicious kick, sent the ball dead, and LS dropped out. BD back mullied the return, which allowed the LS forwards to dribble over the line, BD back just "saving" in time. Shortly afterwards, BD again compelled to touchdown, the "drop out" only brought temporary relief, the LS forwards playing a good combined game. Hirst got possession and gained a try—the kick at goal by the same player was a good one, the ball striking the crossbar, and, unfortunately (for LS), bounced into play. Half-time was now called. On resuming, LS kicked off. LS quickly got to work, and compelled BD to touch down twice in quick succession. This seemed to rouse BD, who played up better, and made several assaults on the LS citadel, and, had it not been for the fine tackling of Trenam, Foster, and Walsh, would have scored. BD at length broke away with a dribble, but, kicking the ball rather too hard, Foster picked up, and, by a good kick, sent the

TELEGRAPH ENGINEERING.—Wanted, young gentlemen to qualify for the profession of Telegraph Engineering at the West London Schools of Telegraph and Electrical Engineering, 101, Uxbridge-road, W. Board, residence, and instruction, £2. 2s. per week.

ball into touch at the "50" flag. From the throw-out Smith gained possession, and got a try for LS. BD objected, alleging the ball had been "knocked on." LS waived the point. Scrimmaging was again indulged in, the LS forwards broke away with a dribble, but kicked too far, which enabled Parratt to gain possession, and by a good run gained a try. The game shortly afterwards terminated in favour of LS. Score: LS, 1 try, 6 touchdowns, to BD, 1 try, 2 touchdowns. For LS, Revell, Jackson, Hird, forward, and Trenam, Foster, and Walter, behind, played well. For BD, Binn and Emsley were the best forward, and Parratt and Steele behind.

(MIDLAND RAILWAY.)

THE result of the late contest was eagerly sought after here, although railway clerks must to an extent be considered outsiders on these occasions, very few having the opportunity afforded them of manipulating the Morse key. We were glad to find the iron roads were represented, and hope to see the numbers increase yearly. The "L.S." representative had our best wishes. It was with deep regret we heard he was unable to present himself.

THE whole of the staff here are subscribers to the TELEGRAPHIST and the "Practical Telegraphist." Some have availed themselves of the Directory, and await its appearance with interest. There is one matter, Mr. Editor, we should like to express ourselves upon. Your (or our) paper appears to have been well received (and deservedly so). Do you not think that the Telegraphists, as a body, would like to see its size enlarged, so that there would be space for additional practical matter, extended query and answer column, &c.? Although we have the statement (on page 69) that ladies prefer "love stories," we do not think they desire that their interest alone should be studied. No doubt there are hundreds of the male staff who would prefer something different, say to know the why and wherefore of some particular subject, amateurs anxious to know how to remedy little defects in their home-made apparatus (which we feel sure many of the ladies would feel an interest in). If this were done, then those who prefer the sweetly-thrilling stories of how, on behalf of charming maidens, heroic young men performed most noble actions, even to eating (utterly regardless of indigestion) little bits of "kicker," they could still be satisfied; whilst those who look for something better would not look in vain. Candidly, Mr. Editor, we are of opinion the paper has had a little too much of the sentimental lately. This does not, however, help one to acquire that knowledge he desires with an aim to advancement. Halfpenny per week is very little. Double it. We shall look forward for your opinion, Mr. E., please.

FRIEND WEBSTER, of our staff, has lately been made happy, his better-half having presented him with a daughter. P.S.—His evenings are engaged for the present.

LIMERICK.

Nor much to report from this quarter since last issue. But a "special event" comes off here on Easter Monday, when the freedom of the city is to be presented to Messrs. E. Dwyer Gray, M.P., Charles Dawson, M.P., and Michael Davitt, the founder of the Land League. An imposing demonstration is being organised, and a heavy press night is anticipated. We are to run two or three Wheatstones on the occasion, and special wire arrangements will be provided.

APPROPOS of Wheatstone working, I may mention a fact that occurred in connection with the late Limerick city election, which, though small in its way, illustrates the wonderful rapidity with which news can nowadays be transmitted in the British telegraph service. On the occasion of the declaration of the poll, the result was absolutely received in the offices of the Press Association in London in *three minutes* after the time the message was handed in at Limerick. The manager of the P.A. was so struck by the feat that he wrote a complimentary letter to the local correspondent—an acknowledgment which, when known, was duly appreciated here.

THE progress of the new works authorised under the sixteenpenny tariff proposal was continued in this district up to the 31st ult. with energy. Mr. H. Pomeroy, the superintending engineer at Cork, is to be congratulated on having accomplished a great deal of necessary operations at short notice, and in exceptionally bad weather.

THE TELEGRAPHIST is highly appreciated here, and its tone much admired.

OUR Telephone Exchange now numbers twenty renters.

MR. HENRY S. DOWNS, the efficient and popular "chief abstract" at this station, had the pleasure recently of receiving the warm congratulations of the staff on—the advent of a daughter.

LIVERPOOL.

ON Friday, April 18th, the members of the Liverpool telegraph staff gave a select concert to their confrères and friends in the Meyerbeer Hall, Hardman-street, the following ladies and gentlemen

kindly volunteering their services:—Misses A. A. Smith, Lyndall, Hutchinson, Hood, Pygott, A. Williams, H. Boig, Keeling, and Elwood; Messrs. J. Evans, jun., Connell, Shea, Crighton, Pincombe, C. J. Rodgers, J. Evans, sen., W. Merchant, J. Summers, and E. A. Evans, and the programme comprised piano solos, duets, violin solos, songs, and recitations. The arrangements were admirable, and the committee of management deserve the highest congratulations and warmest thanks for their successful attempt to provide for the entertainment of their fellow clerks. It is the first re-union of the kind since the memorable strike-concert in Lord Nelson-street, and was no doubt inspired by the accounts which from time to time have appeared in our columns of similar social gatherings in the metropolis and elsewhere. Of course, it will be readily understood that space and other considerations forbid a detailed criticism of a lengthy programme where all were friends and all were volunteers, but justice at least demands that one or two should be specially mentioned. The recitations by Messrs. Crighton and Shea were most artistic. Mr. Pincombe's violin solo, a pretty air by Gounod, well deserved the hearty applause it elicited, although it would have been an improvement if he had been less sparing of the bow in the forte passages. The singing of Miss A. Williams, Miss Hutchinson, Mr. Summers (comic), and Mr. Connell bore away the palm. The hall was filled to overflowing, and the audience were most enthusiastic, and, perhaps, did much by their demonstrativeness to cause the very evident nervousness of nearly all the performers. The very natural detraction thus caused, however, was not allowed to damp the ardour of the audience, nearly every item being encored. As most of the performers were comparatively young, it may not be out of place to give them a hint. In the first place, they all stood too far back, the stage was very high, and the proscenium rather low in proportion, the consequence being that the sound of both voices and instruments was very much smothered. If it was that the footlights were too hot, another hall should be chosen for the next entertainment. A most enjoyable dance closed the proceedings, carriages being ordered for midnight. Promotions:—Messrs. Culligan, Sewart, Paine, Proctor, Porter, Dean, Uhamond, Hall, H. W. C. Smith and Wolfe, from second to first class. Transfer, Mr. H. M. Walker, to Dublin. Resignation, Mr. Shea.

MANCHESTER.

A SOCIETY has been formed under the title of the Manchester Postal Telegraphic Sick Benefit Society. Its members, by paying a small subscription weekly, will be entitled to receive aid whilst incapacitated from duty through sickness. The rules, which are being printed, will be in the hands of the clerks in the course of a few days, and will no doubt be satisfactory. With Mr. Cawdell as secretary, and Mr. T. Hayes as treasurer, the society should be a success.

E. H. C.—This club brought the season to a close on Saturday, April 5, with a seven-miles handicap, which resulted in a win, by one minute, for the scratch man, J. Evans (captain); J. T. Berry (three minutes' start), second; J. Hemming (two minutes' start) being third. Winner's time, 49 minutes. After the run, the members and a number of friends sat down to a substantial tea at the Naturalist Inn, Prestwich. Songs were given by Messrs. Johnson, Hemming, Small, Shipway, and several others. The party broke up at a late hour, after a most enjoyable evening's entertainment. This club will meet next season.

CRICKET.—Liverpool are to play the Manchester staff at a friendly game of cricket in June. These matches used to be of a very pleasant character, and we are glad they are to be revived.

NORMANTON.

FOOTBALL.—Halifax Postal and Telegraph Clerks v. Normanton Postal Clerks.—A most enjoyable game was played at Normanton on Easter Monday, April 14th, ending in a win for the home team by 1 goal, 2 tries, and 9 minor points to Halifax 1 minor point. Wheeldon and Cusworth gained the tries, and the goal was kicked by Hutchinson. The teams afterwards dined together at the Talbot Hotel.

PORTSMOUTH.

THE event of the month, in a telegraphic sense, has, of course, been the Easter Review. The landing of the late Duke of Albany's body, however, gave us a little work. Most elaborate arrangements were made to cope with the expected influx, probably more out of respect for the memory of the illustrious dead than anything else, for the realisation fell far short of the imagination. We had a couple of sets of Wheatstone apparatus and eight special men sent here to deal with the work, which only amounted to about 15,000 words in two days! It is scarcely necessary to say that we could easily have dealt with twice as much without the help of Wheatstones, although, of course, not in so short a time. Our circuit

facilities are exceptionally favourable, as we can "make up" eight "TS" wires at any moment.

SIMILAR precautionary measures were taken to ensure despatch for the Easter event, fourteen men being sent to Petersfield for Good Friday to deal with 14,000 words! There might have been more, certainly, and it was as well to be safe. The total words (press) on Easter Monday evening was 23,000 words, for which we had the help of twelve special men—seven from "SO," and five from "TS." The bulk of the press was done at the head post-office, that being the only office at which the necessary accommodation could be given for the punching.

I see the *Daily News* acknowledged the ample arrangements which had been made and carried out by the staff under Mr. Chichester. It is only right to add here the names of Messrs. Hardy and Hall, our superintendent and assistant superintendent, upon whom the elaboration of returns and most of the management fell.

We hear that the erection of our new Head Telegraph Office may be deferred for another year or more; meanwhile, as nothing is likely to be done to the old offices, we are subject to considerable inconveniences, which it is, however, impossible to rectify.

On April 12, the wife of Fred. G. Bunt, "Clerk," Telegraph Department, Portsmouth, of a daughter.

SWANSEA.

Through a printer's error, in our last issue we gave the name of the captain of the "Telegraphists'" Cricket Club as Mr. Jem Rind. It should have been Mr. Jenkins.

WOLVERHAMPTON.

It is with deep regret we have to announce the demise of Mr. J. C. Sweetnam, Postmaster of Wolverhampton. He had been ailing for about twelve months, but about three months back a change for the worse occurred, since which time no improvement has taken place, and he expired on the 14th ult. He had been Postmaster of Wolverhampton for about twenty years, and his length of service exceeded forty years.

WORCESTER.

We have just started a sick benefit society in connection with the Worcester post-office, and can boast of nearly sixty members. Our postmaster (Mr. W. Branthwait) has consented to become president. The want of this or some such society has for many years been felt at our office, and there is no doubt that it will prove a great boon. The rules we have adopted are (with but slight alteration) the same as those of our Northampton friends, from whom we obtained them. Our advice to other offices who have no such institution is "go and do thou likewise." No one knows its value till they feel the want of it.

Cable Companies.

EASTERN TELEGRAPH STAFF, SUEZ.—On February 25 the above staff gave what the "invitation" modestly termed a "dance," but which, in my opinion, really deserved the more high-sounding and comprehensive appellation of a "ball," to their many friends in Egypt. It was a complete success, and all admitted it was the most brilliant spectacle of the season. Thanks to the untiring energy of the president and committee, the arrangements were perfect. The ladies' ball, and supper-rooms were very prettily decorated with flags, shields, spears, and palm-leaves. Flowers—from several Egyptian markets—were in great profusion and variety, giving forth delicious fragrance from their odoriferous petals as the breeze gently wafted through the salons. Of the refreshment one cannot speak too highly. Everything was spread with a liberal hand; where the cook's ingenuity failed, Alexandria and Cairo confectionery stepped in, making so large an assortment that it would have puzzled the most fastidious taste to ask and to be denied its craving. The guests numbered about sixty, and included representatives of both the English and Egyptian naval and military forces. Right glad they must have felt on entering the ball-room to see that an Englishman's loyalty will ever creep out; not only was it here noticeable in the bunting, but a photograph of Her Most Gracious Majesty our Queen-Empress graced the centre wall, and well it looked above a very deftly-made motto, "Welcome!"

At about 9 p.m. the gladdening strains of music caught the ear, and almost instantly the fair and the stalwart were nimbly circling round the well-polished floor. The cordiality and fancy for dancing were so great that the night seemed to tear on with "rapid strides," for at 3.30 a.m., when "God Save the Queen" was

played, all felt beautifully fresh, except, I am sure, the poor flowers, which had commenced drooping from the want of a sparkling beverage that refreshes and yet does not intoxicate. Poor flowers! I pitied them, yet could not help them; they were, so to speak, eclipsed by the graceful forms and brilliant dress of the fair sex, who fascinated and held captive those who professed to belong to a sterner sex. In conclusion, many were the well-deserved praises and "Good nights" bestowed on the president and committee, who were Messrs. Lay, Heyrat, Richmond, Smith, Stevens, and Pain.

CRICKET.—A match was played at Valentia on Monday, April 14, between the staffs of the Anglo-American and D.U.S. Cable Companies, and resulted in a victory for the Direct men by eight wickets. Following are the scores:—

BALLINSKELLIGS C.C.

First Innings.		Second Innings.	
Cuthbert, bowled Smith	0	not out	2
O'Leary, run out	12		
Watt, run out	1		
Main, b Smith	6		
Harty, b Smith	6		
Sell, b Smith	0		
Armstrong (Capt.), b Smith ..	4		
Furze, not out	3	c and b Jones	0
Ellis, b Jones	1		
Fitzpatrick, b Jones	0	not out	1
Byes, &c.	16		2
	49		5

ANGLO-AMERICAN C.C.

First Innings.		Second Innings.	
Graves, bowled O'Leary	0	caught and bowled Watt...	0
Holt, c O'Leary, b Watt	2	b O'Leary	7
Carmichael, b O'Leary	0	not out	8
Smith (Capt.), b O'Leary	3	c O'Leary, b Watt	0
Jones, b O'Leary	4	l b w, b Watt	1
Jolly, not out	4	b Watt	9
Davies, b O'Leary	2	c Main, b Watt	0
Smythe, b O'Leary	0	b O'Leary	5
Oates, b Watt	0	b Watt	0
F. Tranfield, b Watt	0	thrown out	2
Byes, &c.	21		5
	16		37

DEATH OF THE LATE CHAIRMAN OF THE ELECTRIC AND INTERNATIONAL TELEGRAPH COMPANY.—We have to record the death, on April 7, of the Hon. Robert Grimston, fourth son of the first Earl of Verulam, in his sixty-eighth year. Mr. Grimston had been ailing for a considerable time, but his death occurred quite suddenly and unexpectedly, and it is not long since, when walking along Regent-street, it was remarked that he was to all appearance as hearty as ever. In former years he, as an old Harrow cricketer, pulled his team to the front against all the Public Schools, and afterwards, as President of the Marylebone Cricket Club, the Honourable "Bob," as he was familiarly called, was far away the most popular man of his day. He was a great sportsman of the class which prevailed forty years ago, and a devoted patron of the noble art of self-defence. Seldom did a prize fight take place in those days from which the Honourable Bob was absent. An amusing scene took place in the old Electric board-room at Lothbury, on one occasion, when considerable excitement existed as to the forthcoming competition with the United Kingdom Company, then being launched. Mr. Grimston had kept his co-directors waiting a considerable time, and on his arrival excused himself as he had been to a fight down the river. "It was splendid," he said, and bringing his closed fist down with a sharp smack upon the palm of his left hand he added "they hit so straight and so hard." Business was then proceeded with, but in the middle of the UK discussion, and quite suddenly, up went the chairman's arms again; again came down his lusty fist, and he cried out loudly "We'll smash them." The roar of laughter that accompanied this emphatic declaration of war was one surely seldom to be heard in the Board room of a public company. It is our pleasing duty to add what may very readily be understood, namely, that such a genial and manly chairman was immensely popular with the staff, and it was generally admitted that the sympathetic tie existing between the members of the staff of the old Electric, and which we believe still exists amongst the few now left, and which gave them the air of superiority they were wont to assume, was, in a great measure, due to the hearty and invincible spirit with which they were imbued by the pluck of their good friend, Mr. Grimston.

Correspondence.

To the Editor of the TELEGRAPHIST.

THE RUSSIAN TELEGRAPHIST.

SIR,—The sketch by "Odin" in this month's number of our journal is very interesting so far as it goes; but I am of opinion the habit of so frequently using French, Latin, and even Russian terms is not in good taste. I presume "Odin" is a Saxon; if so, has he so far forgotten his mother-tongue as to be unable to find equivalents for such terms as, "*facile princeps*," "*par exemple*," "*de rigueur*," "*sine quâ non*," &c.? I have not travelled as "Odin" has, so for him to tell me in the February Sketch that the "*istvostchiks*" cry "*Eperyd!*" and that "boiling water can always be obtained at the *samovar*" (is that a coffee-tavern?) is most instructive, not to say highly amusing. Now, sir, if you were to read all the guide-books on Russia and Poland I do not suppose you would find so much valuable information as that expressed in so few words.

"Odin" suggests that an editorial invitation be given to English operators abroad, who might favour us with various foreign types of our "*collaborateurs*." Do so, by all means, sir, but let an interpreter be on hand, please.

We know you are a clever fellow, "Odin"; in fact, your sketches are so awfully clever that not one half of us can understand them, but you really deserve the prize; you do try!

Favour your *confrères* with English composition, "Odin," and then your sketches won't be
DRYASDUST.
London, April 14, 1884.

[*Russian*: Tschin, means rank; samovar, tea-urn (self-boiler); Eperyd, forward; istvostchiks, cabbies. *French*: De rigueur, the strict thing; par exemple, for instance; confrère, colleague; douceurs, tips; coup d'œil, glance; coiffure, head-dress; collaborateurs, contributors; colleagues, associates. *Latin*: Ab initio, from the commencement; sine quâ non, an indispensable condition.—ED. TEL.]

THE GLASGOW ASS.

SIR,—I observe that in your issue of April 1 you publish a letter from a "Glasgow Ass," signed "Transmitter." I beg to inform you (though I may be blamed for my presumption) that this letter was originally published (*not as a letter from a correspondent, but as news*) in the *Glasgow Evening News*, about a week after the contest referred to. It certainly did not emanate from the brain of any G.W. telegraph clerk. Your correspondent doubtless signed himself "Transmitter," because he felt that he was merely transmitting an opinion *not his own*. My only excuse for intruding upon your space is that I feared that this vilely abusive letter might be attributed to some of the G.W. staff. Again apologising for my intrusion, I am, &c.,
CANDIDUS.

Glasgow, April 4, 1884.

A SCIENTIFIC SOCIETY.

DEAR SIR,—I am sorry to see from your remarks last month that an opposition society to the one proposed by you, and suggested by myself, should already have been started at T.S.; and, especially, to see its exclusive character. Believe me nothing of the kind, which in any way restricts its membership to one particular office or district can succeed. At the same time there is scarcely room for two such societies, so that those who really desire to see themselves and others advanced by so desirable a means for mutual improvement should, one and all, combine to firmly establish some such society as you propose.

I shall be pleased to join anything of the kind, although prevented by distance from taking any active part in its formation or management.—Yours very truly,
FRED. E. BUNT.
Portsmouth.

SOCIETY OF SCIENTIFIC TELEGRAPHISTS.

SIR,—I read the report of the meeting held at T.S. with reference to the proposed Society of Scientific Telegraphists with great astonishment. What a selfish spirit is displayed in the wording of the first resolution adopted by the meeting? Exclude district and provincials, indeed! Why should not the provincials retaliate by forming a society among themselves, and excluding all T.S. men? What is sauce for the goose is sauce for the gander. But as you so justly point out, these are the times when "the greatest good to the greatest number" should be the object of such societies, and not the benefit of a selfish few. I still hope to see a society formed, embracing members from all parts of the kingdom, for nothing but a

National Society will be of any permanent benefit to us. "Many men many minds," and a society similar to the one you proposed would prevent mutual improvement societies, such as the T.S. men are starting, from becoming "Mutual Admiration Societies," as they so often do.

Have the T.S. men seriously thought of the benefits they are sacrificing in the shape of rooms, apparatus, and practical help, in order that they may keep out the provincials?

I cannot think that they have. What will they do without apparatus, and how long will they be before they can buy any out of their 2s. 6d. annual subscription? If they have any little "notion" they would like putting into practical shape, how much money will they lose by refusing your offer to let your pupils work it out? Why, sir, your offer to examine entrants ought to have made them accept your proposal for this reason, if for nothing else.

It is useless enumerating the various ways in which they will suffer through their non-acceptance of your offer, and I can only hope that their scheme will be abandoned and that they will stretch out a friendly hand to their brethren in the provinces. What we want to remember is this, *Union is Strength*,—Yours, &c.

NORDRA.

CIVIL SERVICE APPOINTMENTS.

SIR,—I should be very glad if any of the Post-office officials could give me any information as to my obtaining a Civil Service appointment in the Post-office, having been an assistant at a sub-office for four years, but do not understand the Sounder instrument; but could I not perform postal or other work till I had learned the Sounder? Also, could you give me the subjects and conditions of examination? Any information would be gladly received in the next number of the TELEGRAPHIST by yours sincerely,
TELEGRAPHIST.

Answers to Correspondents.

BY THE EDITOR.

F. E. S.—We will reserve your sonnet until we learn the decision of the subscribers anent the volume of "Dots and Dashes.—ANXIOUS ONE. The *Postal, Telegraphic, and Telephonic Gazette* is in no way connected with the TELEGRAPHIST. We know nothing about that journal. You could get it through a bookseller.—ARTHUR WATTS DOYLE. See the "Practical Telegraphist." We shall publish an article shortly on "Potential, Electromotive Force, and Resistance."—ENQUIRER SDC. In this country a knowledge of the French language would be of little service to you unless you could get into the foreign gallery at T.S., and even in that department the clerks are not obliged to be linguists.—G. T., N. E. R., York. Many thanks for your kind letter.—A. G. W. R. TELEGRAPH CLERK. We do not publish your letter because not a single individual except yourself has responded to our invitation *re* the Single Needle Contest. We thank you for your suggestions, nevertheless.—A. CONSTANT READER. We think you would get a better salary as a cable clerk. The addresses of all the foreign telegraph companies will be found in the "Practical Telegraphist."—PAFF, CALIBAN, F. E. S., OLD ELECTRIC, JAYCEE, JOSH, THE CROW, J. H. H., INNES, KELTY, SO-SO, NORTHUMBRIA, and many others. We hope to publish your stories in a shilling volume entitled, "Dots and Dashes by British Telegraphists," and if we get sufficient orders to clear the expenses of the first volume, there is no reason why others should not follow at intervals of three or four months. If the telegraphists of this country want a literature of their own they must wake up from their apathy and encourage our efforts. Many a shilling is spent at the bookstalls in ephemeral works of far less interest to the telegraph clerk than our proposed collection of stories would be. There is plenty of talent in the service and we shall be only too delighted to bring it to the fore.—C. H. (N.E.R.), F. E. B., J. W. (Sr. L.), J. H. (N.E.R.). Many thanks for your earnest efforts on our behalf. If we had a few more such friends in the telegraph service our circulation would soon be doubled.—Topsy (Birkenhead.) We received 45 post-cards, besides yours in favour of a fortnightly issue! Majority for a monthly journal, 4,954. Doubtless many would not take the trouble to vote. If one-fifth of our readers will order "Dots and Dashes" we shall be able to publish an interesting and amusing collection of stories, written by telegraphists. We need not hint that 46 copies at one shilling will not pay the cost of printing and publishing!!!—A. M. C. See reply to "Topsy." If the ladies like amusing stories they will find plenty to interest them in our proposed "Dot and Dash" series.—A. G. W. CORRESPONDENT. The notice of the G.W. and E.H. football match was in type when your letter reached us.

The Telegraphist

A MONTHLY JOURNAL OF

POPULAR ELECTRICAL SCIENCE.

Speed the soft intercourse from soul to soul,
And waft a sigh from Indus to the Pole.—POPE.

LONDON: MONDAY, JUNE 2, 1884.

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Prize Sketch.

No. VI.—DAN DASHER'S DILEMMA: OR HOW HE DEFEATED DELAY.

BY PAUL CHANGER, YO.

"TALKING about being in a fix," said Dan Dasher, one slack night, as we stood round the fire yarning about old times. "I was once in an awful mess, which even now gives me the cold shivers to think about."

Dan, being an able exponent of that beautiful art in which Baron Munchausen holds such a prominent position, the prospect of a yarn from the Ananias of the establishment was quite sufficient to command attention, and, after several admonitions to "draw it mild,"—at any rate, as mild as a man of his abilities in that particular line could do—he cleared his throat and began:—

"A few years ago I was told off to go to a little place called Slusham-Cum-Posh, to send a 'special' of between 2,000 and 3,000 words. Some local magnate was about to unburden himself to that extent of some weighty experimental results in scientific farming—ensilage, I think, it was—and the leading county paper, having a pretty large circulation in that district, was anxious to obtain a good report of his speech. The instrument worked from Slusham-Cum-Posh, ordinarily, being only an A.B.C., to a small market town some few miles away, I was ordered to take instruments and batteries with me, join up 'single current,' and work direct to the town where the paper was published, which was also the place at which I was stationed (the lineman happened to be away, making his fortune at the rate of 1½d. an hour, and was not expected back for some time). Well, I got a S.C. Key, Relay, Sounder, Galvanometer, Battery materials all put into a box together, and the empty battery troughs taken to the station. I had the latter stowed away carefully in the van, but I took the box into the carriage with me, so that it might be directly under my eye.

I had got nicely settled down for a comfortable ride and smoke, when in jumped the reporter, who was going to report the same speech which I had to 'mash.' This was an agreeable acquisition, and, as he had a fund of anecdote, ditto cigars, the time passed pleasantly enough until we arrived at the junction where we had to change. Finding we should have to wait here a short time, I hauled my box out, and, as it was too heavy to carry about, popped it down outside the refreshment-room door. Mr. Reporter and myself then went inside to see "what time it was by the refreshment-room clock." We lingered there till the last moment, and then, as the train came up, out we rushed, he to find a comfortable carriage, I to secure my box. Horror! *The box was gone, and the train just about to start.*

I rushed frantically about yelling 'Where's my box? Where's my box?' Some wag in the crowd wanted to know if it was a horse-box I was seeking. Another of the same kidney suggested it might be a pill-box I was so anxious about. I didn't pay much attention to their chaff, you may guess. Vague notions of rushing into the Railway Telegraph Office, and collaring an instrument of some sort, flashed through my mind, and I verily believe I should have tried it on, had not the train commenced to move out of the

station just then, and my companion, fearing I was about to be left behind, seized hold of my collar and lifted me bodily into the carriage.

Here was a nice go. You will have some idea what my feelings were just then. Visions of enormous bundles of blue paper, tied together into fantastic shapes, with yards of red tape, floated before my fevered imagination, grinning with malignant joy at my abject misery, and pointing with taper fingers at the sentence written in letters of fire, "Mr. Dasher, for your immediate explanation and report." This presented such an awfully and ominously official aspect, that I already saw myself on the "downright" "griddling" in the streets and public-houses, uttering the never-varying petition of "Just a copper towards a night's lodgings." My companion—evidently thinking I had gone mad—endeavoured to soothe me by saying, "That pork-pie must have been stale; it has evidently disagreed with you." It was no use; I could not for worlds have uttered any other word but "box," which I managed to gasp out to the utter bewilderment of my companion until a light seemed to break on him, when he dived into his pocket, and, with a satisfied and winning smile, presented his snuff-box.

After a time, when I had become sufficiently coherent to make myself understood, it gradually dawned upon this disciple of Pitman that there was an extremely poor chance of Mr. B. A. R. Lee's speech gracing the columns of his paper in the morning. The conciliatory tone was all gone now. He made me more uncomfortable—if it were possible—by telling me Mr. Lee was not a man from whom to expect any mercy, as he was a large shareholder in the paper, and supported it with money and matter, ostensibly for the edification of his bucolic neighbours, but in reality for the airing of individual hobbies and the glorification of himself.

On arriving at Slusham, I rushed to the van, in the vain hope of finding the box there; but no such luck—I hadn't put its destination on it; I only found the empty batteries, whose bare plates and empty cells appeared symbolical of the future state of my cupboard and pockets.

We presented but a sorry couple during our walk to the post-office (which was also a grocer's shop), and, on arriving there, I mechanically asked if any box had arrived for me. The postmaster as mechanically said, "What name, please?" "Dasher," said I. He began peering into some pigeon-holes at his back, but, for obvious reasons, he didn't find my box.

Suddenly an idea struck me. If I could only gain the attention of the station who had to join me direct to the head office, I might get an "SG" through giving the state of affairs. Acting upon this impulse, I jumped over the counter—much to the surprise of the P.M., who no doubt thought I had some evil intentions with respect to his cash-box—and commenced grinding away for dear life. When he saw I only had designs on the A. B. C. (which he would have been pleased to part with, no doubt), his courage returned, and, after explanations as to my business, he said: "It's no use grinding that thing, because the wire is joined through for the press-work." This was too much. I sat down in a tin of lard, and wept—yes, actually wept—to think, if I could only have caught that juvenile, whose life was one perpetual struggle with an A. B. C. and single current, I could have solved the whole difficulty by making him transmit, and squaring the reporter to "cut it short." Just think of the fix I was in. Fifty miles from home—a stranger—a special of 3,000 words in immediate prospective, with only three empty Daniels with which to send it. The A. B. C. was of no use, because I knew they hadn't one at the other end. I hadn't even an ounce of sulphuric acid. It was, perhaps, as well I was minus the latter commodity, for, by the Powers! I should have been tempted to swallow it.

After staring at each other for a while the reporter took his "civil," saying it was time to be off to the meeting. I then transferred my idiotic gaze to the postmaster, till I could see he was becoming uncomfortable, and contemplated running. The silence was broken by the ringing of an electric bell, and directly afterwards a small voice, accompanied by a still smaller pair of eyes on a level with the counter, demanded "a pennyworth of pipeclay, and please put it in a piece of paper." That bell! ah! ah! That bell would never ring without a battery, and the battery would never ring the bell unless there was an electro-magnet loafing around somewhere. I set up a fiendish sort of laugh, got up from my improvised seat slowly, for the lard had begun to penetrate, seized a pair of steps, nearly upsetting the little pet with the pipeclay in doing so, mounted up to the bell, and disconnected it carefully. Oh, so carefully, I actually nursed it; yes, nursed it as tenderly as a mother does her child. Then I glared at the Postmaster, and demanded his battery in a "stand, and deliver" sort of style. He said, "there are only a couple of glass things, if that is what you mean, and they are in the cellar, and the cellar is flooded with treacle, a cask having burst, and—"

"Never mind if the cellar is flooded with blood, I'm bound to

have those two cells Leclanché if I have to wade through a sea of gore to get them."

By this time the indicator of the ABC began to behave in an insane manner. It was evident a single-current key was on the job. Wait a minute, my beauty, till I breast this saccharine sea in the cellar, thought I; and if I don't get this special off I'll undertake to eat Mr. B. A. R. Lee, his ensilage, his paper, and all connected with it.

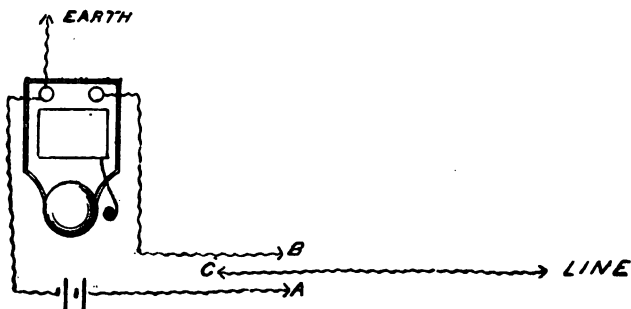


Fig. 1.

I got the cells, which I wanted, and some treacle, which I didn't. The indicator by this time was jostling about at an enormous rate. Off it comes! Off also comes the communicator. Which is earth and which is line? Never mind! either will do. Here! where's the bell? "Haven't you any wire, sir?" I asked.

"No."

"Any ginger-beer?"

"Yes."

"Wired corks?"

However, things were beginning to look better now. We had got an intelligible signal; but to stop him with only a couple of Leclanché cells. It must be done. Only let me get half-a-dozen words with him, then bring on your fiery, untamed scientific farming to any extent.

"Now, you couple of representatives of the 'Force of the Future,'" said I, apostrophising the two cells Leclanché, "if you wish to maintain your reputation for constancy, be constant now, and stop this measly combination of capitals."

"By the way, I'll show you how the bell was joined up," and Dan drew the diagram shown in Fig. 1.

Now I took hold of the line wire, "C," pressed it against the battery wire, "A," giving him the full terrific force of a couple of Leclanché cells. After holding it there a few seconds, I dabbed it against the wire "B," joining the line through the Bell, and anxiously waited results. I hadn't long to wait. The same miserable call assailed my ears—"SQK," "SQK." Here goes to fuse his lightning-protector—"SQK," "G." I ticked out in a painfully elongated fashion; then, putting the line wire to "B," again waited results. The same again—"SQK," "SQK." This was becoming exciting. However, there's nothing like perseverance. Here goes to agitate the Dynamo again—"SQK," "G," and again the wire "C" was joined to "B." A pause—a painful pause—ensued, till at last a sharp "UD" was poured in. Hurrah! It's all right now. They are on the track. I very firmly said, "SQK," "G." Another "UD" was the result. Again "SQK," "G." "Send v's" was now the cry; which, you bet, I did, and gave them every chance to adjust. "Now what's wrong?" was the question. "I am reading from the Galvanometer; don't get any marks from you." "Join up for closed circuit working; only a couple of Leclanchés here," was my answer, which occupied a couple of minutes in manipulation. The answer was quite satisfactory—"RT." Off came the Leclanchés—(I remember I upset one over a side of bacon in my hurry)—; there was a small shower of ginger-beer bottle wire, till at length the connections assumed the shape shown in Fig. 2.

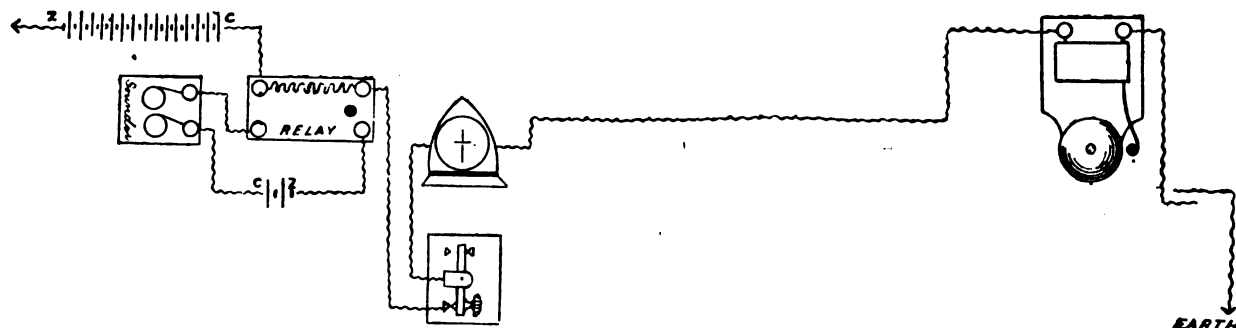


Fig. 2.

"Yes."

"Draw a dozen or so."

The P.M. hesitated.

I suppose I didn't look like a wholesale teetotaler; but by this time my energetic manner had evidently impressed him, and he obeyed, slowly placing a row of bottles, with the corks drawn, on the desk, and handing me a glass to drink from.

"Do I look like a Band of Hope on the spree?" said I, eyeing the row of bottles. "With this display of glassware, does it not strike you, sir, if we only had a mild cigarette each, and our hats cocked at an angle of 45 degs., we should form a grand picture to illustrate the closing chapter of the 'Rake's Progress?' Why, sir, we only want a pack of 'snap' cards and a haggard look apiece to merit instant suppression as an incipient Monte Carlo. Take it away. Take the dod-gasted 'fire-water' out of my sight."

"What shall I do with it?"

"Do with it? Do what you like with it. I don't want it. I'm not troubled with an unquenchable thirst. Throw it into the cellar; work it into the treacle, and give the Good Templars a treat of sweetness and light. Only save me the wire."

"Here's the wire."

"Thank you, sir. Now, wait a minute. Ah! ah! Did you hear that ring? But I can't do with that trembling noise. I must alter that now; that's better. Can you read by sound, sir? No? Well, he's calling 'SQK,' that's the code for your office," said I, hazarding, as I thought, a piece of superfluous information; but, bless you, he didn't know; he said it wasn't. The code for his office was "D."

Now, you see the clerk at the distant end had only to take the spring off his key, and there was a complete circuit when I joined the Bell to earth. Consequently, a current would be on both my Bell and the relay at his end; therefore, if I disconnected the Bell from the earth I should break the continuity of the circuit, so you see, that by alternately breaking and making the circuit, I could send with as much power as he had a mind to put on.

When everything was ready I turned to the postmaster with a beaming face, and said, "All right now, sir!" He wanted to know what I was going to do? "Do!" said I. "The special, of course." "But can you send it with that Bell?" "Yes, and on a pinch can do without the Bell. Bless you, sir, electricity is only in its infancy yet." "I think so," said he, and went in to supper, quite forgetting to ask me to join him.

A short time afterwards Mr. Reporter turned up, with a lugubrious countenance and a copious note-book.

"Good evening. How d'ye do?" said I. "Had a pleasant meeting? Hope you won't stint me as to quantity. I want to show I have done something for my money."

He looked quite surprised, and asked,

"Has the box turned up?"

"Box? what box? Oh! I know now. You mean the box I misplaced? No; it hasn't turned up yet, but I daresay it will be all right."

"But how are you going to send my message?"

"Come in—come right in, old man, and open your shoulders. If you don't finish transcribing these confounded combinations of crab-like characters of yours by half-past eleven, and if I don't finish

three minutes after you, there will be some loose hair lying around in the morning."

And we did, by Jove. Three thousand in two hours and a half is not so bad considering I was minus a key.

After we finished we adjourned to "mine inn" to "see a man." Before we went to bed I remember saying something to my friend to the effect that he could give Pitman any amount of start and a beating, and I have also a dim recollection of him saying Faraday was an old fool compared to yours truly.

"But I say, Dan," broke in one of the listeners, "didn't you get into a row for losing the box?"

"Oh, yes; four hours extra duty; but it turned up next day. You see, the day before I took it away it had come in from the stores, and the label bore the name of my own office. Some intelligent porter had seen it standing outside the refreshment-room door, and, seeing the label, sent it back."

"I say, Dan," said the test clerk, winking at the others, "I didn't know we had in you an embryo engineer-in-chief. Can you tell me which is the positive plate inside a battery?"

"Why, the copper, of course," said Dan.

At this a sickly smile overspread the faces of his auditors and they slowly dispersed.

OUR ELECTRICAL INDUSTRIES.

THE NEW ATLANTIC CABLES.

A VISIT TO THE WORKS OF MESSRS. SIEMENS BROS.

MORE than a quarter of a century has elapsed since the Atlantic was first spanned by an electrical conductor, and few of our young readers will be able to recall the disasters encountered by those plucky electricians who conceived the gigantic scheme of connecting the Old World with the New.

So far back as 1843 Professor Morse expressed his conviction that an electric current could be conveyed across the Atlantic; but it was not until that enterprising American, Mr. Cyrus Field, began to form a company in 1856 that the general public heard anything about the ideas of the men of science; and although very little opposition was encountered as compared with the mountains of popular prejudice which George Stephenson had to beat down when he was projecting his great railway schemes, not a small section of the British public pooch-pooched the idea of an Atlantic telegraph. The capital was raised in England and America, and the paying-out of the first Atlantic cable commenced on Friday, Aug. 7, 1857. On Tuesday, Aug. 11, the cable broke in 2,000 fathoms of water, when about 330 nautical miles had been laid. The originator of so great an undertaking was not discouraged even at this disaster, and arrangements were soon made for a fresh supply of cable to replace the lost portion. In 1858 the whole of the cable was successfully laid, and her Majesty and the President of America exchanged messages. There were great rejoicings in both countries; but, after working tolerably well for a few days, a fault in the conductor decided the fate of the cable. Half-a-million sterling was sunk never to be recovered, and the shareholders were on the verge of despair. One man alone refused to "say die," and that was the indomitable Cyrus Field. He agitated the question of another cable; and a second company was started in 1862. The firm of Glass Elliot (now the Telegraph Construction and Maintenance Company) agreed to supply the new cable for £700,000. The greatest care was taken in its manufacture, and on June 14, 1865, the Great Eastern left the Medway for the Nore carrying 7,000 tons of cable, 2,000 tons of iron tanks, and 7,000 tons of coal. At the Nore Dr. Russell states she took in 1,500 additional tons of coal, which brought her total dead weight to 21,000 tons! On the 2nd of August the cable snapped, and another half million was consigned to the mighty deep. The length of cable paid out was 1,186 miles, and the distance from Heart's Content, Newfoundland, 606·6 miles. Several attempts were made to recover this cable, but the picking up machinery was not equal to the occasion, and the enterprise was abandoned. Another cable was ready in twelve months time, which was laid by the Great Eastern without a hitch, and on the 2nd of September, 1866, the lost '65 cable was picked up and completed six days later! This brief record will give the reader some idea of the difficulties encountered by the pioneers of Ocean Telegraphy, and when we hear of a cable being laid across the Atlantic in two or three weeks without anything unusual occurring, we ought to feel grateful to that band of persevering electricians who, by repeated failures and disasters enough to shake the courage of any but the Anglo-Saxon race, discovered the way to make and lay those deep sea cables of which we are so justly proud.

In 1869 a cable was successfully laid from Brest, in France, to St.

Pierre Island. In 1873 a cable was laid from Ireland to Newfoundland, and in 1874 two cables were laid, one for the Anglo-American Company, and the other for the Direct United States Company. Then the Compagnie Française du Cable Transatlantique laid a cable in 1879; and the two last cables were laid by the American Telegraph and Cable Company in 1881 and 1882.

At the present time two new Atlantic cables are in course of construction at the works of Messrs. Siemens Brothers, Woolwich. These lines will be owned by two American millionaires—Messrs. Bennett and Mackey. Two or three other gentlemen have shares in the undertaking, but the greater portion of the capital has been subscribed by the above-mentioned millionaires. Believing that a brief description of the construction of the new cables would interest the readers of the TELEGRAPHIST, we visited the works of Messrs. Siemens Brothers a few days ago, and obtained a sight of the process of cable manufacture.

The conductor or "copper centre" of the deep sea section is formed of thirteen wires spun into a strand. The copper of which the conducting wire is made is selected with the greatest care. The centre wire is about one-tenth of an inch in thickness. The twelve thin wires are bound over the central wire by a small stranding-machine, which grasps the principal wire as it is driven through an orifice, and fastens the twelve minor wires around it. There are ten stranding-machines at work upon this cable, and these can together turn out fifty miles of copper conductor per diem. These wires are tinned, and when the copper strand leaves the machine it is covered with india-rubber, which is warmed into a paste and put on by pressure. The cable now resembles ordinary thick g.p. wire, and it is wound on drums in three knot lengths. The next process is to cover the cable with jute, securely bound with four thin yarns. An ordinary observer would mistake the cable for common rope after it receives its coating of jute. There is now a stoppage in the process; the cable is coiled into tanks filled with water, where it remains for two or three weeks. At frequent intervals it is subjected to the most delicate electrical tests, and if a fault is discovered, no matter how slight, it is not allowed to pass unnoticed. The cable is jointed from tank to tank, and great care is taken in this part of the operations, for a bad joint may lead to a fatal disaster after it reaches the bottom of the sea. At the expiration of its period of primary submersion, the cable is removed from the tanks and got ready for the sheathing process. The sheath consists of twenty-four steel wires. Each coil of the sheathing-wire is subjected to a very severe test; the two ends are cut off, and a strain is put upon them equal to 700 lb. If the wire breaks before the dynamometer registers the required strain test the coil is rejected. We were informed that the sheathing wire is a sort of Bessemer steel, and it is said to be of a quality superior to any which has hitherto been used in the manufacture of submarine cables. As each portion of the cable receives its binding of twenty-four steel wires, it passes slowly over a reservoir of molten compound, and the black liquid is poured upon it, filling up all the interstices. Onward it goes over the rollers, and next receives a coat of twenty-one manilla yarns. It then passes over another compound trough—and its covering is instantly changed from brown to black. Rolling on its way, it is now supplied with a covering of Russian hemp, then another shower of compounds, and the work is finished. The cable does not, however, stop here, but passes over numerous rollers until it reaches the tank ready for its reception, where it is coiled pending the arrival of the cable-ship. To prevent stickiness, each coil is covered with whitewash, and the tanks are filled with water. Some of these tanks are of enormous capacity. We saw one which held 500 knots of cable, and we were informed that the tanks on board the cable ships were quite as large, if not larger. In viewing the works of Messrs. Siemens Bros., we were struck with the perfect order which reigned in every department. The telegraph works of this great firm cover 7½ acres of ground, and no less than 2,500 men are employed in the manufacture of cables and telegraphic apparatus.

That our enterprising cousins across the water should have to send to England for cables, speaks volumes for the electrical progress of the old country. There is no need to write a laudatory notice on the eminent firm of Siemens Bros.; their reputation is world-famed, and for us to say that their work is perfection would be like "painting the lily," or "gilding refined gold." We can, however, add that the excellence of their work is only equalled by the courtesy of their officials, and we are pleased to congratulate the firm on possessing so careful and conscientious a servant as Mr. Reis, the gentleman who was appointed our guide last Friday afternoon.

MORSE, who invented the telegraph, and Bell, the inventor of the telephone, both had deaf mute wives, which leads a wag to observe, "Just see what a man can do when everything is quiet."

TELEGRAPH INSTRUMENTS, AND HOW TO USE THEM.

BY ELEKTRON.

BATTERIES USED IN TELEGRAPHY.

MR. S. ANDREWS, Chief of the Battery Department at the Central Telegraph Office, London, has kindly given me the following results of his experience with the batteries now in use:—

THE DANIELL.—The Daniell form of battery now in use, with the flat, porous cell (Wedgewood's make are the best), give good results, and are very constant on closed circuits. They are refreshed every fortnight. If the porous cells are very soft, they would require refreshing weekly. With this class of work, the zincs last only from three to four months, and part of the zinc solution is syringed out every alternate time, when the battery is refreshed with sulphate of copper crystals. On open circuits, the zincs last from ten to twelve months with hard work; and the zincs are well scraped each time the sulphate of copper is added, which is about once a month, the same process being gone through at alternate intervals, as above stated. This battery should be kept closed, and protected from draughts of hot and cold air as much as possible, or a damp copper crystallisation creeps all over the outside of the cells, and short circuits are formed, destroying the power and making the battery look very dirty.

FULLER'S IMPROVED BICHROMATE.—The results obtained from this battery, when carefully prepared and maintained, are about double, as regards electro-motive force, and about four times the quantity of Daniell. The cells are refreshed every fortnight with three or four ounces of sulphuric acid, and at intervals of a month or six weeks with the same weight of the bichromate crystals, or prepared paste. The zinc solution is partly syringed out every time. Sulphuric acid is put in the outer jar with the carbon plate. The zinc cell is filled up with water. The zinc rod, being covered with and standing in mercury, lasts about six months. After two or three years' saturation and work, the carbon plates become soft and spongy, losing their electrical virtue. The objection to this kind of battery is that the fumes given off are very injurious to health, and, if the jars are upset, the solution destroys everything it comes in contact with.

THE LECLANCHÉ.—This battery, under certain conditions, is extraordinary as regards its length of life. I have known it working five years with washing out every twelve months to get rid of the second salts that form, and renewing with from two to four ounces of sal ammoniac, according to the size of the cell. A little fresh sal ammoniac is also put into each cell every six months. The zincs should be well amalgamated with mercury when the battery is first set up. For house-bells and circuits with little work this battery is the best and least costly of any form I know. I need scarcely add that in every case a most important matter is to keep all connections clean and screwed up firmly. The battery shelving at the Central Telegraph Office would, if arranged in a straight line, extend from St. Martin's-le-Grand to the Marble Arch! There are no less than 12,000 Daniell, 8,000 Fuller's Bichromate, and 800 Leclanché cells in use.

ENERGY IN THE VOLTAIC CELL.

"The materials of an ordinary voltaic cell," Professor Thompson says, "may be regarded as the fuels of electric currents, just as coke and coals are the fuels of steam-power. Like those fuels, they represent a store of energy." In the voltaic cell, the flow of electricity continues so long as the wires are joined. To separate an atom of zinc from one of oxygen requires energy to be expended. When thus separated they have the chance of doing work in re-uniting, this work generally appearing in the form of heat. When a piece of coal is burned—that is to say, is permitted to unite chemically with oxygen—its store of energy runs down and manifests itself in the evolution of heat. A piece of coal represents a store of energy; so does a bag of hydrogen gas; so does a piece of zinc, for zinc can burn directly and give out heat, or may burn indirectly by being dissolved in sulphuric acid, also giving out heat. A Daniell's battery represents a store of energy. A pinch of gunpowder also represents a store of energy. The amount differs, it is true, and the rate at which some of these stores can be made available for use also differs widely in the different cases. An ounce of coal represents an amount of energy which, if entirely expended in doing work, would raise 695,000 pounds one foot high against the force of gravity, or would do 695,000 foot-pounds of work. In an ounce of gunpowder is stored about 10,000 foot pounds of energy. An ounce of zinc represents a store of only 113,000 foot-pounds. An ounce of copper represents a store of about 69,000 foot-pounds only. An ounce of hydrogen gas will yield, by combining with oxygen,

2,925,000 foot-pounds of work. Joule first showed us how to make use of facts like these in calculating by its mechanical value the electric power of voltaic cells. Let us apply these considerations to the storage of energy in any ordinary voltaic cell—say, for example, the Daniell's cell used in telegraphy. In this cell we have certain liquids containing zinc and copper chemically dissolved in sulphuric acid, and into these liquids dip a plate of zinc and a plate of copper. The zinc plate slowly dissolves away, and, at the same time metallic copper is gradually separated out of the solution, there being 1 l. 20 oz. of zinc consumed for every ounce of copper deposited. Now to separate an ounce of copper from its solution in sulphuric acid, requires 61,000 foot-pounds of energy to be spent upon it, and as 1 l. 20 oz. of zinc represents a storage of 118,650 foot-pounds, the consumption of this weight of zinc is enough to provide the 69,000 foot-pounds needed to separate the copper and to leave a surplus of 49,650 foot-pounds. It is this surplus which goes to maintain electric currents in the circuit and do electric work. But, as we have remarked, the voltaic cell is reversible. If we could take such a cell, and, by means of some superior electro-motive force, drive electric currents back through the cell, the whole action will be reversed. Copper will be dissolved, and zinc will be deposited. The copper in dissolving will help the process by giving part of the necessary energy, and our currents will thus once more give us back pure zinc, and so separating out the zinc, we do work and actually store energy.

ELECTRIC LIGHTING.

THE GLOW LAMP, AND HOW IT IS MADE.

A CONSIDERABLE portion of the work of manufacturing glow lamps is performed by machinery, by which greater uniformity is ensured, but the chain of operations by which the rough materials are converted into a finished incandescent lamp is as follows:—

The closed end of the bulb is heated and drawn out into a hollow cone. To this little cone is then fused, a short fine tube by which the envelope is afterwards to be attached to the exhausting apparatus. The next process is to prepare the glass stem by which the carbon filament is held in its place within the globe, and within which the platinum conductors are fixed that are to join it to the connecting fittings. A piece of tube is taken and its two ends are drawn or tapered off. It is then thickened up in two places, between which it is divided into two separate tubes; two platinum conducting wires are then passed through the tube, care being taken that they do not touch one another. The large end is then heated nearly to its point of fusion and is squeezed flat, so as to cause the platinum wire to be closely embedded within its substance. The little cranked pieces are then soldered to the ends of the wires, and to these are attached by an electro deposit of pure copper the ends of the carbon loop described above. The glass stem with the carbon filament attached is then introduced into the neck of the bulb, to the mouth of which its thickened portion is attached by fusion, so as to form with it one piece of glass. The drawn-down end is trimmed off square. The exhausting tube is drawn down in two places so as to form two capillary contractions. This tube having been attached by a mercury joint to a Sprengel air pump, the bulb is exhausted, and when the requisite exhaustion is complete the contraction nearest the pump is sealed up, leaving a short length of tube attached to the capillary neck, but exhausted to the same degree of internal residual pressure. A second sealing-up of this neck renders the hermetic closing of the lamp complete, the object of the double-sealing being to guard against any leaking into the envelope at the moment of detaching from the pump, and by fusing a little globule of glass upon the sealed-up point all possibility of an opening being left into the outer air, however minute, is removed. Nothing now remains but to attach the terminal fitting to the stem of the bulb, and the lamp is complete.—From "The Practical Applications of Electricity," by JULIUS MAIER.

The Hire-Purchase System of Furnishing conducted by NORMAN & STACKY commends itself to all classes. It combines real economy on sound commercial principles, with strictly private arrangements, and is free from all the objectionable formalities which attach to dealers and others. No interest or fees are charged, and payments can extend over 1, 2, or 3 years. The wholesale firms embrace the best manufacturers, who have large stocks for selection, and no additions are made to the ordinary selling prices. Intending purchasers should call or send for particulars.—Offices, 11, Queen Victoria-street, E.C.—[ADVT.]

THE POST-OFFICE RIFLES.

THE INSPECTION IN HYDE PARK.—THE FIELD TELEGRAPH COMPANIES.

ON Saturday, May 24, the seventeenth annual inspection of the Post-Office Rifles (Colonel Du Plat Taylor) took place in Hyde Park. The weather was delightful, but we do not think that the gallant Colonel and his splendid regiment deserved to be kept waiting three-quarters of an hour for Colonel Clive, of the Grenadier Guards. We have always understood that punctuality is a part of military discipline, and we wonder how the inspecting colonel would have enjoyed a wait of forty-five minutes under a burning sun. A large number of persons assembled to witness a brilliant display of military skill by a volunteer regiment which is acknowledged as being second to none in the service. From first to last there did not seem to be a single hitch during the inspection, and the march past evoked a hearty burst of applause from the spectators.

The 24th (P.O. Rifles) is made up of officials belonging to all branches of the Postal Service. In that corps there are clerks, sorters, and letter-carriers, and, judging from what we saw of them on Saturday, they are all picked men. We have travelled in various countries, and we have had opportunities of witnessing military displays in France and Italy, but in all respects the P.O. Volunteers will compare favourably with any regiment we have seen in the former country; and we do not believe there is a single regiment in Italy equal to the 24th in military bearing and warlike proficiency. We wish to do justice to the regiment as a whole, but we must confess that our interest centred in the Telegraph section, and we looked out anxiously for Captain J. J. W. Blanchard and his Field Telegraph companies. We saw the gallant captain looking every inch a soldier, but we had no opportunity of speaking to him, or we might have gleaned some interesting details. At a little distance from the inspection-ground there was a large waggon in charge of a number of telegraphists, and we made our way to the spot, determined to say a word to our friends before they had the order to fall in. Some of the noble warriors were sitting on the grass, drinking from mysterious-looking vessels covered with black cloth, and others were lying on their backs, their helmets over their faces to protect them from the sun's burning rays. We had only to mention the title of our journal. In a moment we were surrounded by a group of "Provincials"; several "old Company's men" wished us success, and many were the manifestations of good fellowship and faith in our efforts. One Edinburgh man shouted, "Where is the Glasgow ass? Let him come forth and show himself." We did not expect to see the long-eared animal, for we are of opinion that the bray which made us show our teeth emanated from a miserable penny-a-liner or twopence-a-liar on a certain half-penny rag published not a hundred miles from G.W.

We were really astonished to learn that so many provincials belonged to the regiment, and we are rather surprised that our correspondents did not apprise us of the fact. We managed to obtain the names of a number of the provincial volunteers, but we regret that our inability to meet with some of the M.R. and G.W. men prevented our adding the names of the members belonging to those places.

The following is a correct list so far as it goes:—

BIRMINGHAM.—Acting corporal, H. Simpson; Privates H. Skinley, G. Dorman, T. Whittall, J. F. Braine, F. C. Braine, R. Lang, and H. Heywood.

EDINBURGH.—Corporal Wilson; Privates C. Gray, Isles, Thomas T. Smith, J. Smith, C. Callagan, J. C. Robertson, J. Hutchison, Grigor, Kinnear, Ballantyne. Eight of the above have been accepted for the Army Reserve.

HULL.—Corporal H. B. Kaufmann; Privates G. O. Heath, A. Heaton, E. Lack, A. George, J. H. Craven.

The provincial men seemed to understand their duties thoroughly, and taken altogether the result of last Saturday's inspection must have been equally gratifying to both officers and men. We can understand the value of the Field Telegraph Companies in time of war, and although we must hope for peace we cannot help thinking that Capt. Blanchard and his efficient staff would be ready at the first summons to enter into active service, and to prove that the British Telegraphist, although habituated to a sedentary life at home, could, at a moment's notice, transform himself into a bold and fearless soldier.

Mr. J. EDWIN SHERMAN, of Sing Sing, has invented a dry battery which he expects to revolutionise the working of the telephone. It is a little oblong box, $4\frac{1}{2}$ inches by $1\frac{1}{2}$, and three-quarters of an inch deep, and is attached to the instrument instead of the ordinary battery. By its use, it is said, it is possible to carry on a conversation with a person thirty or forty miles away, and to hear and be heard distinctly.

OCEAN TELEGRAPHY.*

By WM. MAVER, JUN.

PART. I.

THE first submarine cable of any considerable length was laid in 1850, across the English Channel. It is estimated that there are now about 80,000 miles of submarine cables in operation in all part of the world, which have been laid at an expense of about £30,000,000.

At present there are eight cables in operation between America and Europe, and two more are in process of construction. Four of the above cables are owned by the Anglo-American Company, two by the American Company, and one each by the Direct and French Cable Companies. The two to be laid will be owned by the Commercial Cable Company, of which Messrs. Bennett and Mackay are the chief owners.

The Anglo-American Company's cables are laid between Valentia, Ireland, and Heart's Content, Newfoundland; those of the American Cable Company, run between Canso, N.S., and Penzance, England; the Direct Company's lies between Torbay, C.B., and Ballinskelligs, Ireland; and that of the French Company between Brest, France, and St. Pierre, Miquelon. It is expected that the Bennett-Mackay cables will be laid between Valentia and Dover Bay, Mass. Europe is connected by cable with South America from Spain to Pernambuco.

The principal ports of South America are connected telegraphically by means of submarine cables from port to port. This is also the case with the ports on the East Coast of Africa.

Admirable maps, showing the route and length of the various cables, have been issued by Mr. F. N. Gisborne, Superintendent of Telegraphs, under the authority of the Department of Public Works of the Dominion of Canada.

From various causes, such as chafing against the sharp rock at the bottom of the ocean, or from coming afoul of the anchors of vessels, cables are apt to become broken or injured, but such breaks and injuries can now be located and repaired with remarkable facility.

There are at present twenty-seven vessels engaged in different parts of the world in laying new cables and in repairing old ones.

The vessels employed in this business are provided with paying-out and hauling-in apparatus at the bow and stern, and with all the necessary paraphernalia for picking up broken and damaged cables.

Broken cables are picked up by means of an instrument termed a grapnel.

A grapnel is made of a stout piece of iron, two feet long, at one end of which are blunt hooks. To the other end of the grapnel the rope is attached. The rope is about an inch and a quarter in diameter, and is made from twisted strands of the strongest hemp. When the vessel arrives at the location of the break, she is steamed considerably to one side of the cable, and then the grapnel and rope are let go. The course of the vessel is steered so that she will sail across the cable. An instrument, called a dynamometer, is attached to the grapnel-rope on the vessel, and this instrument accurately indicates the strain on the rope. The weight of the cable being known, it is easily ascertained when the grapnel has hooked it; should the grapnel become fastened to a rock, the strain, as shown by the dynamometer, rises suddenly, whereas when the cable is caught the strain rises gradually.

Some time ago one of the Anglo-American Company's cables was picked up without difficulty in the middle of the Atlantic from a depth of two miles. Another cable was picked up and repaired in the Bay of Biscay from a depth of over three miles.

A cable has been laid across the Atlantic, without a hitch, in the remarkably short time of twelve days.

The price of a cable message at present is two shillings per word, but lower rates are likely to result from the new competition. This rate has a tendency to cause customers to use their ingenuity in condensing their despatches into as brief a space as possible. This sometimes has the opposite effect, however, for it is not uncommon to see messages from correspondents asking for more definite instructions or information, as the former abbreviated message was unintelligible.

The rule limiting the length of words to ten letters also has a demoralising effect upon some of the users of the Cables, particularly upon their orthography. Thus it is a frequent occurrence to notice "immediatly" spelled "immediatly," "dissolution," "disolution," etc., to bring them within the ten letter limit. In technical phraseology such specimens of illiteracy are mildly termed "evasions," and they avail the writers nothing, as the extra toll is invariably collected. Others endeavour to shorten their despatches by using a foreign language, and running two or

* From the *Electrical World* (American).

three words together in that language, but this device barely suffices to carry the message unquestioned out of the originating country.

When it reaches its destination the evasion is promptly noticed, too, and the extra toll is charged.

Cable messages sometimes undergo amusing transformations at the hands of clerks unfamiliar with the language in which the dispatches are written. I remember having seen a despatch from Lisbon to a person in New York, about the holiday season, which read, "Wish you all a happy New York."

The bulk of the cable despatches are sent over to the Atlantic cables between the hours of 10 a.m. and 1 p.m. and between 5 p.m. and 9 p.m. New York time. The morning rush is continued in a measure by messages emanating from the Stock Exchanges in London and New York, and as the five hours' difference of time between New York and London only allows of about one hour of simultaneous session of the two Exchanges, the business is necessarily hurried. During that time the New York Stock Exchange is connected directly with the cable terminus at Sydney, Cape Breton. Answers to stock messages have frequently been received between these two cities within 15 minutes.

On a trial test, on one occasion an answer was received from London in exactly six minutes. The test was made without previous preparation.

(To be continued.)

A NEW TELEGRAPH SYSTEM.

A NEW telegraph system, by which the present code is simplified, has been exhibited at Boston, U.S.A. Chemically prepared paper, moved by clock-work, receives the record of signals sent over the lines, which are represented by dots and dashes, as in the Morse code. On the moving strip of paper rest the points of six fine iron wires or styluses, and the chief feature of the new system consists in enabling the operator at the transmitting station to make a signal through whichever one of the six styluses he may choose, although only one line wire is used, and in this way to make the position of the mark which is recorded on the chemical paper play a part in determining its meaning. The new system is the application to telegraphy of the system of notation employed in music. Just as the pitch of a half-note is determined by the bar in which it occurs, so a telegraphic character is by this method given six different meanings, according to the stylus through which it is sent, and the position in which it is recorded. The bars of the staff are ruled by copper styluses which make a red line on the receiving strip as it is moved forward, a constant current from a local battery being passed through them for this purpose. When a message is to be sent by hand, six keys are used at the transmitting station, each corresponding to one of the styluses at the receiving station, or one key pivoted to swing easily over six contact points may be employed. As each signal has six different meanings, according to the bar on which it occurs, only one-sixth as many are required as in the Morse system, and for these the shortest and simplest are selected. Thus, a dot is used for the six letters which occur most frequently. In this way the actual time occupied in making the signals required to send a message is reduced fully one-half from that required by the Morse system, so that the speed of transmission is doubled.

Among the advantages claimed by the new system are the readiness with which it is learned, the ease with which a message can be translated after it is received, and the impossibility of stealing it from the wires during transmission by the use of a sounder. The process of sending messages has been still further simplified by a machine just completed, in which each letter is given a separate key, by the depression of which the proper signal is sent over the wire automatically, thus requiring no more skill to send a message than to operate a type-writer.—*Telegrapher's Advocate.*

THE VELOCITY OF ELECTRICITY.

THE problem of determining the velocity of electricity was first attempted by Wheatstone in 1834, with an instrument invented by him for the purpose, and known under the name of the Chronoscope. This consists of a mirror rotating with enormous velocity, which velocity he measured by means of the musical note produced in another part of the apparatus by the same motion. In front of the mirror a spark-board was placed, which was a circular block of wood, in which were set in a row six wires carrying small knobs, and round these, and over the face of the wood, was a thick coating of some resinous insulating compound. The outer coating of a Leyden jar was connected with the first of the knobs; between the second and third a quarter of a mile of copper wire was inserted, and also a quarter of a mile between the fourth and fifth,

When an experiment was to be made, the sixth knob was connected with the inside coating of the jar. The discharge then took place in the following way:—A spark passed from No. 6 to No. 5; the electricity had then to traverse a quarter of a mile of copper-wire to reach No. 4. A spark occurred between No. 4 and No. 3; then came the second coil of wire; and lastly, the spark passed from No. 2 to No. 1. Now, if the three sparks all occurred at the same instant, the reflection of them in the mirror would all be seen side by side in a row, but if one of them occurred later than another, the mirror would have turned onward through a small angle, and the image of the sparks would exhibit this retardation. The latter was found to be the case, and from measurements made in this way, Wheatstone estimated the velocity of electricity at 288,000 miles per second—a rate at which it would travel twelve times round the earth in one second.

Subsequent investigation showed, however, that it is impossible to express the velocity of electricity absolutely, and that it depends very much upon the circumstances under which the signal is transmitted. The following table of results shows this:—

	Nature of Wire.	Velocity in Miles per Second.
Wheatstone, 1834.....	copper	288,000
Fizeau and Gonelle	copper	111,834
"	iron	62,130
Mitchell (Cincinnati)	iron	28,331
Walker (America)	iron	18,639
Gould.....	iron	15,830
Astronomers of Greenwich and Edinburgh.....	copper	7,600
Astronomers of Greenwich and Brussels.....	copper	2,700
Atlantic Cable, 1857, 2,500 miles, with heavy needle galvanometer and induction coils.....	copper	1,430
Atlantic Cable, 1858, 3,000 miles, Thompson's mirror galvanometer and Daniell's battery...	copper	3,000

THE PROPOSED INTERNATIONAL TELEGRAPHIC CONTEST.

(WHAT THE AMERICAN JOURNALS SAY ABOUT IT.)

THE recent telegraphic (Morse) contest in England has given rise to much discussion here, many of our men expressing a burning desire to have that champion silver cup transferred from the tight little isle to this glorious land of "go-as-you-please." We think it could be done, judging by the time made by the English champion, Mr. J. Chapman (about 32 words per minute). That is nothing unusual, and is beaten here every day. Neatness and symmetry were also taken into account, and even in that respect we shall not be afraid to back an American team against the Englishmen. We might mention W. S. Waugh, Lou., McCarthy, and Thomas R. Taltavall, in this city; Ernest Emory, W. N. Gove, and Superintendent Jones in Philadelphia; Mr. Christie and E. W. H. Cogley, at Cincinnati; Mr. Shannon, at Oil City; Geo. Eitemiller at Pittsburg, and a score of others—as pretty, perfect, and fast senders as ever England produced, and all of whose records exceed that made by the youthful champion of England. We are willing to admit that England can produce as fast operators as we can; but we claim that, with their lumbering code of signals as against our rattling combination, we can beat them, everything else being equal. We have sworn records of fast Morse sending at the rate of forty-two words a minute for sixty consecutive minutes—over 2,500 words in one hour. Now, let our esteemed contemporary of London, the TELEGRAPHIST, lay these hard facts before its readers; and, if they think they can do as well, we will afford them an opportunity. The forthcoming Electrical Exhibition at Philadelphia will afford an excellent opportunity for such a contest in that city; and, if our sturdy cousins across the water will send a picked team thither, we pledge them a cordial reception socially, and the liveliest kind of a time telegraphically. They might not take their silver cup back with them, but they would return loaded with pleasant recollections of America and American telegraphers. Meantime, we thank the TELEGRAPHIST for its promise of its contest in honour of the visit of the editor and publisher of the *Operator* to England this summer.—*The Operator.*

From the London TELEGRAPHIST we glean a desire to arrange for a grand International Telegraphic contest. American operators can contribute a few cents each and send at least six of the finest transmitters to London to compete for a trophy, if our friends on the other side of the Atlantic can make the necessary arrangements. No doubt it will prove an interesting contest. We can, with pride, boast of our senders, and should be willing to back them against any others the old country can produce. Let us hear something on the subject from our correspondents.—*The Telegrapher's Advocate.*

Editorial Notes.

OUR subscribers will notice that we have changed the Sub-title of the TELEGRAPHIST in order to widen the sphere of this journal, and we hope that our many friends in the Telegraph Service will introduce us to their acquaintances who take an interest in electrical matters. There is no journal published in this country which gives popular accounts of the doings in the electrical world. Unscientific readers do not care for a. b. c. and x. y. z. They want the latest news in subjects electrical and telegraphical, written in popular language and perfectly free from mathematics. During the past month we have had a large number of letters from agents, contributors, and subscribers, and the opinion of the majority is that we should discontinue the fiction element and admit to our columns only articles and paragraphs bearing some relation to the science of electricity. We are told that love stories, no matter how brief they may be, are out of place in a journal devoted to telegraphy. Granted, but the gentlemen who vote for the elimination of fiction ought to think of the ladies just a wee bit. Many of our subscribers belong to the fair sex, and a large percentage of female telegraphists care little or nothing for science. While agreeing to reject the "silly love stories," as they have been termed, we shall be pleased to publish, from time to time, sketches of life in the telegraph service, or amusing stories after the style of "Dan Dasher's Dilemma," and we shall always reserve space for "Dots and Dashes," and "Electrical Tit-Bits." The contents of the present number will give our supporters a very good idea of the lines upon which we intend to conduct the Telegraphist in future.

DOTS AND DASHES BY BRITISH TELEGRAPHISTS.—We have received about eighty-five orders for the above work! Comment is needless. The Literary Telegraphist would meet with better support from the general public. Out of the eighty-five orders, three were received from the Central Telegraph Office, London—staff 1,803; and nine from Kirkwall, N.B.—staff 1.!!!

THE CENTRAL TELEGRAPH OFFICE, LONDON.—We have secured the services of a gentleman, who has more than one idea, to act as our correspondent. From what we know of our new reporter the staff will, we think, be pleased with the selection. We have also appointed an agent who will always have a stock of the TELEGRAPHIST on hand, and from whom copies can be obtained at any hour of the day or night.

OUR CHAT WITH CALCUTTA.—The obliging managing director of the Indo-European Telegraph Company has promised to furnish us with some interesting particulars about the route followed by their wonderful line—batteries employed, relay stations, resistance, &c. These details will appear in our next issue.

COMPETITION SKETCHES.—Subscribers are asked to vote for the following sketches, which have appeared in our columns:—"The Russian Telegraphist," by Odin; "A Ghostly Tale" (in verse); "Dan Dasher's Dilemma," by Paul Changer, Y.O. Voters' cards must be sent in before the 15th of June.

A PRIZE OF ONE GUINEA will be given to the writer of the best original article on either of the following subjects:—"The Progress of Telegraphy since the Transfer," "The Future of Electric Lighting," "The Utilization of Earth Currents in Telegraphy," "What is Electricity?" "Conduction and Resistance."

IMPORTANT NOTICE.—Once more we are compelled to remind our contributors that paragraphs received after the 15th of the month cannot appear in the following issue. Articles and paragraphs written in pencil will be consigned to the waste-paper basket. All contributions must be written on one side of the paper only. No rejected manuscripts will be returned unless a stamped-directed envelope is enclosed. Applications for copies of the journal must be addressed to the publisher, not the editor, or delay will be unavoidable.

THE SOCIETY OF TELEGRAPH ENGINEERS.—On Thursday, May 22, Mr. W. H. Preece gave a very interesting account of the Electrical Congress at Paris, and the new "Legal Ohm" was defined by that eminent electrician. Mr. Preece did not finish until nearly half-past nine, when Sir William Thomson rose and made a "few" remarks which occupied thirty-five minutes. At ten minutes past ten the President declared the meeting over, and not one member had an opportunity of joining in the discussion. In fact

there was no chance for a discussion, and this seems to us anything but just to the hundreds of members who get tired of listening to one or two gentlemen who make a point of having something to say at every meeting. With all due respect to the few regular speakers, we are of opinion that the reader of a paper ought not to exceed the limits of one hour, and all other speakers ought to be satisfied with ten minutes' talking. If this rule were adopted the meetings would terminate much earlier, and give members an opportunity of expressing their views. On Thursday night Sir William Thomson might have said all he had to say in ten minutes. He was scarcely audible, and his speech was made up of about three lines, which he repeated over and over again. We often wonder why our great scientists do not study rhetorical effect. They are frequently obliged to speak in public, and if some of them only knew the pain they inflicted on their audiences they would at least condense their speeches and make the torture as brief as possible. It was only out of great respect for Sir William that the risible muscles of the members were controlled on Thursday evening. One gentleman remarked, "This is as bad as the House of Lords!" And another exclaimed, "Sir William is wound up, and won't stop until his energy has run 'down!'" Sir William Thomson is a scientific genius; his appearance evoked a hearty burst of applause. We acknowledge him as the brightest star in the electrical world, but we cannot help suggesting that he should prepare his speeches and make them as brief as possible, because he is no orator.

Dots and Dashes.

AMERICAN.

(From the *Telegrapher's Advocate*.)

LIGHTNING recently struck a telegraph pole in Texas and ran along into the office, when the operator seated at the instrument excitedly telegraphed back, "Don't send so fast!"

JAMES RILEY, a telegraph messenger, was found on the street, March 11th, a raving maniac. He kept crying, "I am Butts, the boy detective." His brain was turned by boys' novels.

MATCHLESS things—the electric lamps.

THE first lightning calculator—Benjamin Franklin.

A NOTEWORTHY occurrence—Messenger boy on a run.

LONG-WINDED messages—weather reports.

PEOPLE who live on tick—telegraph operators.

WHY are linemen the greatest travellers in the world? Because their business takes them from pole to pole.

AN Arctic telegraph instrument—A polarised relay.

ONE of the oldest calls known—"Get up!"

Electrical Tit-Bits.

TELEGRAPHING WITHOUT ARMS.—At the school for telegraphy in Ann Arbor, America, one of the students has not the use of his arms, yet he sends and receives messages all right. On the table in front of him is a pencil and a stick. Taking the pencil between his teeth he can write a good hand—if that is what one would call it—and with the stick in his mouth and resting on the key he can send messages at the rate of about seventeen words per minute. His name is Manly Shotwell, of Concord, Jackson Co., Mich.

AN AMERICAN'S OPINION OF THE BRITISH TELEGRAPHIST.—The English telegraphs are controlled by the Government. The operators there receive more pay than do the American telegraphers. They work fewer hours; they are taken care of when sick and provided for in old age, and best of all they are leagued together into an organization, which has twice by its united action drawn concessions from the Government. Every city and village has its literary, gymnastic, cricket, foot-ball, or other club, which proves that recreation in the English service is the rule rather than the exception, as in America, where operators have little time for pleasure.—*Telegraphers' Advocate*.

TELEGRAPH CODER.—The most copious cipher codes of the present day are the English cable ciphers. They are extraordinary structures, one of them comprising 30,000 words. Others are made up of syllables selected from living and dead languages, combined so as to make euphony. These express nearly everything, and besides effectually serve the purposes of absolutely inviolable secrecy. A copious cipher for a firm's exclusive use is considered worth from 500 dols. to 2,000 dols. The inventor of one code largely used in the grain business in this city has acquired a comfortable competence from its sale. Several cipher-makers in New York do a flourishing business, and there are dealers in the nineteenth century jargons in New Orleans who thrive from their work.—*Chicago Inter Ocean*.

THE TELEGRAPHISTS ELECTRICAL AND SCIENTIFIC BIOGRAPHY.

AMPÈRE, ANDRÉ MARIE, whose name is imperishably connected with the great discoveries in electro-magnetism, was born at Lyons in 1775. In 1804 he was nominated professor in the Polytechnic School of Paris; and here, in connection with Oersted, Faraday, and other distinguished men of science, with whom he was in constant correspondence, he paved the way for those brilliant discoveries that have already issued in the electric telegraph, and promise an illimitable extension of the boundaries of science. Died 1836.

COOKE, SIR WILLIAM FOTHERGILL, born 1806, shares with Sir Charles Wheatstone the honour of the authorship of practical electric telegraphy. With Wheatstone he took out the patent for the electric telegraph in 1837. Died 1879.

DANIELL, JOHN FREDERICK, D.C.L., inventor of the celebrated battery which bears his name, was formerly Professor of Chemistry in King's College, London. He was born in London in 1790, and died 1845.

DEMOCRITUS, one of the most celebrated Greek philosophers, was born at Abdera, B.C. 460. On the death of his father, Democritus travelled in Egypt, Chaldea, and other countries. He spent his inheritance in his travels, but, instead of seeking public employment and honours, he retired to solitude, devoting himself wholly to philosophical studies. In his system he developed still further the atomical theory of his master, Leucippus, and applied it not only to the formation of the universe but to the soul of man, the senses, the elements, &c. He has been called the "laughing philosopher" (in contrast to the weeping Heracleitus), which epithet probably originated in his practice of humorously exposing the absurdities of his countrymen, whose stupidity was proverbial. He is said to have lived to the great age of 105.

GALVANI, ALOYSIUS, celebrated as the discoverer of galvanism, born 1737, studied medicine and became lecturer in anatomy at Bologna. Died 1798.

LEUCIPPUS, a Greek philosopher, whose writings are lost, but who is celebrated as the originator of the atomic system. He is commonly said to have been the disciple of Zeno, and the master of Democritus, who more fully expounded his system.

MORSE, SAMUEL FINLEY BREESE, inventor of the "recording electric telegraph," born 1791, came from the United States to England in 1811 to study painting at the Royal Academy. Returning to America he practised as a portrait-painter. In 1835 he completed his model of the "recording electric telegraph." His system was gradually adopted in all parts of the union. He held the chair of natural history at Yale College. Died 1872.

RONALDS, SIR FRANCIS, electrician, born 1788, was the son of a merchant, and was educated at a private school at Cheshunt. As early as 1816 he invented and constructed in his own garden at Highbury, and afterwards at Hammersmith, an electric telegraph, consisting of eight miles of wire supported on poles, through which he sent messages. These were read off in nearly the same manner as was afterwards adopted, by the motions of needles on a dial-plate. He gave an account of these experiments in a pamphlet published in 1823. From 1843 to 1852 he was honorary director of Kew Observatory, and during that period he invented an apparatus for the observation of atmospheric electricity, which was adopted at the Observatory of Greenwich and at others. To him we are indebted for the invention of several photographic self-registering meteorological and magnetical instruments, the importance of which was recognised by the grant in 1849 of a Government reward. In 1870, when he had reached the age of 82, he was knighted, "in acknowledgment of his remarkable labours in telegraphic investigation." Died 1873.

OERSTED, HANS CHRISTIAN, discoverer of electro-magnetism, born in 1777, was appointed to the chair of natural philosophy in Copenhagen, where he laboured till his death, producing the numerous works which he gave to the world during his long and brilliant career. In 1819 his labours were crowned by his grand discovery of electro-magnetism. In 1836 he visited England, and at the meeting of the British Association held at Southampton in that year, Sir John Herschel, in reference to his grand discovery, used these words:—"The electric telegraph and other wonders of modern science were but mere effervescence from the surface of this deep, recondite discovery which Oersted had liberated, and which was yet to burst with all its mighty force upon the world." On his return to Copenhagen he continued to work till his death in 1851. His "Soul in Nature" has been translated into English.

VOLTA, ALESSANDRO, an experimental philosopher, was born at Como in 1745, and died at Pavia in 1826. Volta's great invention was the electrical column or voltaic pile. Hence the name "voltaic" given to electricity generated by chemical action.

WHEATSTONE, Sir CHARLES, shared with Sir W. F. Cooke the honour of the authorship of practical electric telegraphy. He was born in 1802, and in 1834 was appointed Professor of Experimental Philosophy at King's College, London. He first described the stereoscope, which he invented, in a paper read before the Royal Society in 1838. Died 1875.

(To be continued.)

DICTIONARY OF TECHNICAL TERMS USED IN TELEGRAPHY.

AMALGAMATION.—Zinc is protected from waste by having its surface coated with mercury.

BATTERY.—A combination of two or more voltaic cells coupled together in series.

BRIDGE (Wheatstone's). An apparatus for measuring resistances by balancing the unknown resistance against one known, and capable of adjustment.

CELL.—Each separate vessel in which a chemical action occurs by which electricity is capable of being developed.

CIRCUIT (Conductive).—The wires, instruments, &c., forming the path for the passage of the current.

CIRCUIT (Inductive).—The term applies to static electricity. Inductive Circuits are partly composed of insulating material as air or condensers.

CIRCUIT (Derived).—When part of a circuit is divided into two or more parallel branches each of the branches is called a Derived Circuit.

CIRCUIT (Combined).—In telegraphy two or more circuits so connected by repeaters or otherwise that signals in one are reproduced in the other.

CIRCUIT (Metallic).—One in which a return wire is used instead of the earth, as when two wires are looped.

CIRCUIT (Telegraphic).—That connection between two terminal stations whereby signals can be passed from either one to the other without mechanical repeating or translating.

COMMUTATOR Break, Contact-breaker, and Circuit-changer, or Switch.—They are of many forms, according to the purpose required.

CONDUCTIVITY.—This is a relative term, and applies to that inherent property of any substance whereby the passage of electricity through it is effected with the least opposition.

CONDUCTORS.—Substances which most freely permit electricity to pass. Formerly it was thought that substances were of two distinct classes—conductors and insulators; but it is now known that the difference is one of degree only.

CONNECTIONS.—Wires, &c., completing the circuit between the lines and different apparatus.

CURRENT.—The supposed flow or passage of electricity or electrical force in the direction from + to −, or positive to negative. It therefore originates at the zinc surface in contact with the solution, and passes from the zinc to the copper or other negative element in the liquid of the battery, but from the negative element to the zinc in the external circuit.

CURRENT, REVERSE.—A current in an opposite direction to the normal current.

CURRENTS, EARTH.—This term is used to indicate the currents that are observed in a circuit partially formed by the earth when the batteries have been removed. They are occasioned by the different action of the soil on the earth plates or by a difference of potential in the earth between the places where the wire is grounded.

DEFLECTION.—The angle or number of degrees through which the needle of a galvanometer moves when a current is passing through its coils.

ELECTROMETER.—An instrument for measuring electric potential.

ELECTRO-MOTIVE FORCE.—The force which develops electric tension or potential. In ordinary galvanic batteries the E. M. F. is set up by the attraction of the zinc for an acid radical; its degree depends upon the force and the number of such chemical affinities in circuit, and inasmuch as there are also opposing affinities tending to develop E. M. F. in the opposite direction, the actual force depends upon the excess of the total affinities in the direction of the current over those of the opposite direction.

GALVANOMETER.—An instrument for measuring currents.

(To be continued.)

LITTLE Miss Eula Brown, daughter of the Agent of the Central Railway, at Courtney, Texas, although but seven years of age, is an expert telegrapher, reading easily by sound the fastest press report and sending upwards of thirty-five words per minute. Her father defies the country to bring forward as good a telegrapher of the same age.

The Central Telegraph Office, London.

It may interest provincial readers to know that the interior of the Central Telegraph-office has, for some months past, resembled a huge saw-mill. Large balks of timber have been lying about in all directions, and the British workman has diligently operated with saw and hammer, in sublime unconsciousness of the existence of the British telegraphist. The cubic area has been materially diminished by a temporary low ceiling, supported by a forest of scaffolding; but most of this is now being removed, and we breathe again. It certainly speaks well for the workmanship of the contractors that they have succeeded in adding an entire story to so immense a building without any interruption of the ordinary business. About half of the metropolitan circuits have already been removed to the new gallery, and when it is quite completed the remainder are to be located there. The new test-box is absolutely superb, and is hardly smaller than its gigantic parent beneath. But why—oh, why—have they built that funny little staircase (which surely was originally modelled for the Lowther-arcade) right athwart a doorway still left open for traffic? I could mention more than one grave personage whose head has suddenly been called upon to try conclusion with the woodwork of that staircase.

On the 9th of May our cloak-room presented rather a striking appearance. The floor was strewn with innumerable heaps of paper which only partially concealed a deadly and appalling litter of broken bottles. The batches of lockers moved from their homogeneous positions, effectually blockaded the extensive room; and countless telegraphists, squatting in Oriental fashion among the remnants of their household gods, afforded reflection to a contemplative mind on the mutability of human associations; for the authorities had wisely adopted the occasion of the transfer of the cloak-room to the new premises in Bath-street, to procure a complete clearance of the cupboards. The female staff was transferred first, and after they were gone we utilised their old cloak-room as a temporary depot for what coats, hats, and umbrellas could be rescued from the general wreckage of our quarters. How the ladies survived their turn-out, provided it was anything like ours, will always remain a profound mystery. And when it was all over, and cupboards, clerks, and cloak-room attendants alike had disappeared, the two grim fire-places grinning at each other across the breadth of the deserted and dismantled chamber, with nothing stirring except the mechanism of the old clock high up on the wall, presiding in solitary state over a billowy sea of slippers, beer cans, broken mugs, splintered bottles, unclaimed hats, tattered books, grimy papers, broken sticks, empty milk, cocoa, mustard, coffee, and meat tins, old coats, battered spoons, and discarded travelling bags—that place would have been a study for an artist—or a poet. This is what was picked up there the next day:—

LINES ON A TELEGRAPH POLE.

Rising from out of a bed of heather,
Where a legion of weeds entwine,
And the grasses and nettles grow thick together,
There stands an old friend of mine—

A weather-worn mast,
All grimy and green,
That there for the last
Score summers has been.

I lie at its foot, where the ferns are softest,
Half up the lone hill-side;
Where the beetle sings best, and the moth comes ofttest,
Chasing his truant bride.

And my eye wanders far
From its summit on high,
To the last dawning star
In the deepening sky.

I list to the tune that the weird wires whistle
Up there in the gathering night,
And somehow or other my fancy will bristle
With images tender and bright;

For I know that her hand
Has thrilled one wire,
And far o'er the land
That magical lyre

Seems tuned to the touch of her fairy fingers,
And rings for ever and aye,
As though in its tremor her sympathy lingers,
And never can die away.

THE dining-rooms in Bath-street are nearly all that could be desired, and if we only had a monster pier-glass behind the spacious

bar, and just a little more expedition in serving, the Holborn Restaurant would play quite second fiddle.

THE NORTHAMPTON FUND.—Mr. Cousins, of the B Division, has been elected as the T.S. representative, to attend the annual conference shortly to be held at Edinburgh in connection with this fund.

Provincial Items.

BIRMINGHAM.

ON Friday, April 18th, in connection with the inauguration of a Civil Service Prayer and Scripture Union at Birmingham, a meeting of the staff was held in the Post-office, Paradise-street, and a provisional committee, consisting of seven members, with the hon. secretaries (one from the Postal and one from the Telegraph branch) was elected. To their hands were entrusted the duty of organisation, the fixture of a time and place of meeting, and the drawing up a scheme of rules which should be submitted to the confirmation of a general meeting. Accordingly, the committee proposed to meet every Tuesday evening, at 8 p.m., for an hour, devoting the first half to song or psalmody, and the reading of an essay, or extemporary speaking, and the next to prayer. With regard to the presidency, knowing the deep interest the Postmaster felt in matters of this kind, he was cordially elected to that office. The rooms of the Young Men's Christian Association, 80, Paradise-street, having been secured, the first of the series of meetings took place there on Tuesday, April 29th, the attendance being of a very promising character. The Postmaster took the chair, and, after the minutes had been read and confirmed, offered a prayer for the success of the Union. He then gave an address, and, while expressing himself deeply sensible of the kindly feelings which had led to his election to the presidency, he very much regretted that he felt compelled to decline the office. He, however, would occasionally attend, as he might find himself able, and as an earnest of his goodwill, subscribed a guinea towards the incidental fund. The meeting, which was of a hearty and genial character, was closed with prayer.

CRICKET (Birmingham Telegraphs, Married v. Single).—This match, played at Cannon-hill-park, Birmingham, on May 17, 1884, resulted in a victory for the married men by one wicket and fourteen runs. The following is the score:—

Single.		Married.	
Davis, c Crane, b Dixon	7	Dixon, retired	15
Haden, c Grafton, b Dixon ..	3	Egerton, b Ward	14
Ward, c sub, b Dixon	7	Dawson, run out	2
Hides, c sub, b Egerton	6	Grafton, b Hides	17
Fiddian, b Egerton	13	Instone, b Hides	0
Knight, b Dixon	4	Hyde, lbw, b Ward	0
Price, st Grafton, b Egerton ..	0	Crane, c Smethurst, b Hides ..	7
Foxley, run out	0	Dorman, b Fiddian	2
Smethurst, c Grafton, b Egerton ..	13	Sub, b Fiddian	0
Whateley, c Dawson, b Egerton ..	0	Sub, not out	0
Pugh, not out	1	Griffiths, absent	0
Extras	2		
Total	56	Extras	13
		Total	70

BRISTOL.

It may interest and stimulate others to know that a Telegraph Clerks' Bible Class is held weekly in connection with this office at the Y.M.C.A. There is a pretty regular attendance of between eight and twelve members. After a most interesting study of the first Epistle of John, we are now deep in Paul's Epistle to the Romans. The meetings are commenced with singing and prayer, a well instructed member of the class then leads off with the chief points or thoughts in the portion under consideration, and this is followed by general conversation and inquiries, being careful to keep to the subject in hand. The meeting is quite unsectarian in character, the members coming together simply to search the inspired volume and to seek the spiritual welfare of each other. The first Wednesday evening in each month is entirely devotional, when prayer is made for our fellow-clerks throughout the U.K., &c. We shall be pleased to see notices of similar meetings at other offices in the pages of the TELEGRAPHIST.

CARDIFF.

ELECTRIC CRICKET CLUB.—The annual meeting of this club took place at the Volunteer Hotel on Saturday, May 3rd. The secretary's report on the financial position of the club was very satis-

factory. Officers elected for the ensuing year:—President (Mr. Sterling), secretary and treasurer (Mr. H. Baker), captain (Mr. Walkley), vice-captain (Mr. A. Davies). Committee: Messrs. Clement, H. E. Evans, Garret, Morris, Parsloe, and A. Roberts.

COLCHESTER.

THE "TELEGRAPHIST" is much appreciated at this office, every clerk now subscribing to it.

The recent earthquake in the Eastern counties, being most disastrous in this district, caused a tremendous rush of messages both at this station and our transmitting offices. Indeed, never before was such a busy day experienced as on April 22nd, when our office was literally besieged by anxious people, and our TS wires (four in number) were blocked for hours. Nearly a thousand messages were dealt with, including a number of press messages, amounting in the aggregate to ten thousand words. The staff (numbering eight) worked most energetically the whole day, without relief for meals, to meet this sudden pressure. We are pleased to record that our efforts to cope with this unexpected influx of work without any additional assistance has been recognised and acknowledged by our district surveyor in very gratifying terms.

DERBY.

On the occasion of the Home Secretary's annual address to his constituents last month, 29,789 words were actually punched, and 49,783 words signalled. In addition to the local staff employed ten other gentlemen were withdrawn from the SF and NG offices to assist. Six Wheatstone transmitters were called into requisition, and the work was got off in excellent style and time, under the supervision of our esteemed superintendent.

THE rapid strides of telegraphy during the last ten years is admirably set forth in an article contributed to one of the local newspapers by our respected postmaster. The messages dealt with in 1883, as compared with 1870, show an increase of 248,000. The postmaster also adds, "Within the memory of by no means the oldest inhabitant of the town the whole clerical staff of the Derby P.O. consisted of the late postmaster, his sister, and one female clerk; it now numbers 165.

EDINBURGH.

ELECTRIC SHOOTING CLUB.—This club, all the members of which belong to the telegraph department, held its first competition for the season on Friday, May 9, at the Hunter's Bog. The weather was very unfavourable—quite a gale blowing. There were seven rounds at 200 and 500 yards. The following were the three highest scores:—J. C. Robertson, 51; W. Smith, 44; R. S. McNab, 40.

PROMOTIONS.—Mr. F. Barnard, from the first class to the class of "clerks;" and Messrs. D. Sim, J. McNab, and T. Winlay from second to first class.

GLASGOW.

PROMOTIONS.—Mr. William McNair has been promoted from first class telegraphist to second class inspector (Engineering Department), and Mr. John Henderson from second to first class telegraphist.

IPSWICH.

My organ of continuity so badly serves me that, in an item respecting the number of your journals subscribed for at this office, I omitted to say that, in addition to those taken by the clerks, three others were taken by the linemen. This should be an inducement to linemen belonging to other offices to join with them in taking the journal. One more of our number has "shuffled off the mortal coil" of bachelorship and donned the garb of connubial bliss. On Sunday, 20th inst., Mr. E. J. Cable was united to a fair damsel of this town, and in honour of the event was presented with a splendid dinner-service by his compeers. We all wish both him and his young wife long life and continued happiness. May they prosper. We were thrown into a state of consternation here on the 22nd ult. by an earthquake-shock, which made its presence terribly felt. We were apprised of its approach by a rumbling noise, as of distant thunder. Two or three oscillations were distinctly felt. The windows were violently shaken, and a large partition separating the instrument-room from that of the messengers shared a similar fate. Our genial-natured and worthy superintendent, who was busily engaged with his official accounts, was roused from his labour by the convulsive state of the office, and inquired as to the cause of it. His query was soon responded to by a torrent of messages, descriptive of the phenomena, which were poured in from Colchester and the neighbouring districts. Although, as we afterwards learnt, some wires at one or two other offices were affected by the earthquake epidemic, none suffered here.

LANCASTER.

MR. JOHN MARSDEN ROBERTS has been appointed sorting clerk and telegraphist at this office.

LEICESTER.

TO ALL WHOM IT MAY CONCERN.—On Tuesday, May 6th, Mr. James Ward Walter, of the Leicester Telegraph Staff,—having solemnly abjured the rights and privileges of bachelorhood, and promised that he would no longer carry a latch-key—took unto himself a helpmeet, in the shape of a wife. As a small mark of their esteem for "Jamie," his fellow clerks presented the happy pair with a very handsome teapot. "Jamie" and his better half, I believe, are spending the honeymoon at the famous Lincolnshire health resort—Skegness.

The non-appreciation of your efforts to establish a purely Telegraphic journal is sincerely regretted at this office. I think if every office gave you the same support in proportion as Leicester, we should hear no more of the probability of the journal falling through, but should soon see a fortnightly issue. We take 20 copies amongst a staff of 30, including learners.

In response to your appeal, I have promises of ten subscribers for "DOTS AND DASHES," and trust we shall soon see it in print.

LIVERPOOL.

ANOTHER concert will be given by the Liverpool telegraphists, in the Rodney Hall, Rodney-street, at 8 p.m., June 4th, in aid of the Cricket Club. It will conclude with a dance. Friends in the Cable and Railway Companies please note.

IN the list of promotions for last month, Mr. Whamond's name was misprinted "Uhamond." The error is regretted.

MANCHESTER.

MANCHESTER SICK BENEFIT SOCIETY.—We are glad to report the above a decided success. Close upon one hundred applications for membership have been made, and, although the obvious aim of the society is to benefit the married portion of the staff, we are told that a fair number of the juniors have availed themselves of its advantages. R. W. Mason, Esq., and C. H. Sirett, Esq., have consented to be the trustees. The committee consists of Messrs. Bragg, E. Harrison, Kinsey, D. Wood, and Woolley, with Mr. G. H. Cawdell, secretary, and Mr. T. Hayes, treasurer.

NEWPORT (MON.).

THIS office has now been made an Inspector's headquarters. The increasing importance of the district around Newport consequent upon the growth of the coal and iron trade, and therefore the greater demand for telegraphic facilities, also the rapid spread of the telephone exchange system has made this necessary. The district extends from Marshfield (a small village midway between NE and CF) on the west to Newnham on the east, embracing MU on the north. We cordially welcome Mr. Charles Taplin to his new control, and hope his connection with the district will be a long and prosperous one.

A VERY interesting presentation was made by the staff at NE to their much-respected superintendent on April 28, the occasion being that gentleman's birthday. The presentation took the form of a complete set of Charles Dickens's works, the inscription being, "Presented to W. H. Callway, Esq., by the staff under his control at Newport, Mon, as a slight token of their respect and esteem. April 28th, 1884." His uniform kindness and affability towards the staff have deservedly gained their highest "respect and esteem," and we sincerely hope that the day is far distant when the connection between NE and its superintendent will be severed.

PORTSMOUTH.

FOLLOWING the good example set by Northampton and other towns, we are making a preliminary move towards the formation of a Sick Benefit Society. The Secretary of the Northampton Society has kindly furnished us with a copy of their rules, which appear to be simple, and easily applicable to our town. Altogether the idea is looked upon as a step in the right direction.

We have 51 members in our branch of the U. K. Postal and Telegraph Clerks' Benevolent Society, showing that the beneficial objects of that Society also are fully appreciated in this district. We would commend it to the notice of those of our fellows who have not yet joined.

IN face of the caution lately issued by the department concerning the divulgence of official information, it behoves your correspondents to use some care in the compilation of their reports, although, as far as the Telegraph branch of the public service is concerned, such warning is almost unnecessary. We are so used to treating everything which comes to our knowledge as "strictly confidential" that it is seldom anything which "didn't ought" is allowed to

"slip" through. There are departments of the state, however, which may not be so particular, and around these the "bonds of secrecy" might advantageously be tied.

THE Town Council of Portsmouth have memorialised the Postmaster General, with the object of having one of the offices in the town kept open for Telegraph business all night. At present, no office is open later than 10 p.m. No decision in the matter has yet been made public.

SHEFFIELD.

WE are glad to say that the TELEGRAPHIST is still keeping in favour with our staff, the number of subscribers being larger for the next half-year than it was in the last.

ONE of our staff, who has been on the sick-list for some time, has just had a novel experience. He is an active member of one of the local chapels, and his inability to attend the services there has caused him great disappointment. A week or two ago, through the kindness of several telephonic friends, he was able to hear the sermons preached, a transmitter being placed on the pulpit of the chapel, and joined to a telephone at his house. Excellent results were obtained.

OUR cricket club has opened its season by playing an undecided game with the Caledonians. The score, chiefly through the excellent batting of H. Cookson, was carried to 37, when rain unfortunately put an end to the play.

ON May 20th, at the parish church, Mr. A. Jackson joined the ranks of the Benedicts.

YORK.

THE new post-office building is rapidly approaching completion, and according to present appearances we shall be in full occupation by the end of July.

WE have to chronicle the advent of a new "daily," which promises at present to augment our "received" to a considerable extent. The first number is now before us, and we find the usual errors consequent on the confusion and hurry of a first issue, the most amusing of which is, perhaps, an interpolation which says there was "Renewed laughter and Bheers." As the competition promises to be keen between the *Herald* and the new venture, we may safely anticipate a lively time during the ensuing summer.

HENRY PHILLIP DE LACY-LEACY, who was recently transferred from Teignmouth to this office, has resigned, and is now on his way to try his fortune at Panama.

Cable Companies.

VERA CRUZ.—I dare say you will not object to receiving a short account of the cable telegraphers of the Mexican and South American cable companies who are so many thousands of miles from the dear old country. To begin with, this is an American cable company of great future promise and good present earnings, looking carefully after the interests of its *employés*, and paying them good salaries; to their credit be it also said they draw their men principally from England. The president of the company is J. A. Scrymser, and the general manager J. R. France, Esq. The operating staff is here composed in the order of their length of service in the company:—Superintendent, Mr. F. Van Valkenburgh; manager, H. G. Wilson; operators, C. Cummings, J. C. Murphy, F. P. Brooke, C. Baker, J. Cummings, G. W. Moss, G. Butcher, A. E. Thornton; bookkeeper, G. Charlton; counter clerk, E. Seyburn. From here north we work a cable of 788 miles in length to Galveston, Texas, having Tampico (Mexico) as an intermediate station. From Galveston the Western Union Company place at the disposition of this company a land line working through two repeaters direct to New York, a distance of over a thousand miles. From here south to Salina Cruz about 300 miles, *via* the Isthmus of Tehuantepec; and from there to Lima, *via* La Libertad, San Juan del Sur, Panama, Buenaventura, Santa Elena, Payta, Callao, Lima, a total distance of 3,169½ miles cable. From here west we work to the city of Mexico direct, a distance of 270 miles. Instruments used here are Sir W. Thompson's Recorder, and sounders for the land lines. As I cannot give you a detailed account in this communication of the climate, customs, arts, &c., belonging to this part of Mexico, I will leave it to my next; and in saying farewell for the present will add that there is an excellent *esprit de corps* amongst the staff, and that they have been, and are, highly respected by the principal people in this city. The majority of the men, including myself, came from the Eastern Telegraph Company.

The Poetical Telegraphist.

WHERE over meadows, bright with springtide flow'rs,
Electric wires were stretched from pole to pole,
A maiden wandered, whilst the sunny hours
To idle reverie inclined her soul:—
She wondered could the wires be heard to speak,
And stopped to listen with her dainty cheek
'Gainst one of their supports, that rudely stole
A kiss—a stinging kiss—such as the ear would feel
If gently touched by a vibrating strip of steel!

"O fie!" quoth she, "thou ugly thing of wood;
For thou hast ta'en what I would ne'er consent
That thou shouldst take, since kisses are the food
Of Love, and lover's lips alone were meant
To feed on them. So to my absent swain
I prythee forward thine ill-gotten gain,
For it is *his*." E'en thus she did invent
A playful argument; nor dreamed that overhead,
In secret silence, passed the message—he is dead.

F. E. S.

Correspondence.

TO SUBSCRIBERS.

BY A SUBSCRIBER.

THE Editor of THE TELEGRAPHIST has shown us plainly (in the May number) that it has been, and still is, his wish to make this Journal a bond by which manipulators in all parts of the world may be held together in one strong and kindly feeling towards each other.

Our friend (for such indeed he is) has drawn a rough sketch of his financial position with regard to this paper; and all of our readers must have come to the conclusion that the Editor is not working for his own gain, but for the good of the British Telegraphist. Many people consider themselves first, and others afterwards. Any of our readers who are a little inclined that way, will perhaps follow me for a few moments in a train of thoughts suitable to their way of thinking. To speak more clearly, we might say, "Purse-worshippers should read this carefully."

Now take a look round at the monthly journals which may be seen at any bookstall in the United Kingdom. We fail to find any paper so well got up, for such a small sum as twopence monthly, as this paper has been. What journal could be of more interest to a telegraphist? Does the "Grinder" wish to have a new organ already? Or does he wish the gap which THE TELEGRAPHIST has filled up to be again open? No paper could contain more articles perfectly adapted to the taste of the majority of British manipulators. Our American friends support two journals; surely the mother country can support one!

Some might venture a suggestion about starting a new journal; but it is easier to say than to do. To start a new organ requires an energetic man, and a thorough *lover* of the class for which he writes. Could any one be found so thoroughly suitable for the position of Editor as Mr. W. Lynd? He has had years of telegraphic experience, "both at home and abroad," and therefore understands perfectly the wants of the large body of operators whose welfare he has at heart. He was a great friend of the late novelist and dramatist of whom we have so recently read records in the daily papers, and whose works cannot fail to make an impression on the hardest of hearts. From time to time Mr. Lynd has written excellent articles in popular magazines, and, independent of his fondness for scientific researches, we could not find an editor more devoted to the TELEGRAPHIST. He is a man who says what he thinks, and will not deviate from the truth to please anyone. Should any of our readers see the truth of these statements, we think that they will do all in their power to support this interesting journal.

A YOUNG GRINDER.

To the Editor of the TELEGRAPHIST.

THE RECENT "MESSAGE-MILKING" CASE.

SIR,—The death of Mr. Charles Reade has occurred at a time when his powerful pen would have come to our aid in two very prominent cases; those of Weldon v. Winslow, and the *Central News* v. the Eastern Telegraph Company. With regard to the latter, we look for an independent opinion in the TELEGRAPHIST for June, not

alone as representing the telegraph service, by which is meant the staff at home and abroad, whose claim to be represented has never been permitted; but as a protest on behalf of your colleagues in the press, who, up to this date, have not received the sympathy of their professional brethren in the scientific papers. As to the "fair and impartial" report, for which we are indebted to the paper representing the Eastern Telegraph Company, and owned by the directors of that Company, all that need be said is that one column is given for the plaintiff's case and twelve columns to the defence. All the stock-jobbing references are struck out ("fairly and impartially," no doubt), though, for the matter of that, a great deal might have been added to the stock-broking proclivities of telegraph officials besides the simple sailor.

The editor of the *Eastern Electrician* might surely have left out his claim to fairness and impartiality in one issue, or his judgment on cant in the other.

The question is, "Were the expenses incurred by the *Central News* and the personal efforts of Mr. Burleigh rendered nugatory by the loss of priority in their intelligence?"

It seems to me they were rendered nugatory, and that it is an injustice to the press and the public generally that such a thing should be possible, or that it should be in the power of, or permitted to, officials to threaten it; even if, in the face of telegrams mutilated or delayed, their customers get angry and "venomous."—I am, sir, your obedient servant,
ROVADO.

May 17, 1884.

HOLIDAYS: FEMALE v. MALE.

SIR,—At this office the female staff of the first-class have received the, to them, gratifying intelligence that they are to have forthwith three weeks' annual leave instead of a fortnight.

Their unfortunate sisters of the second-class are not to participate in this boon. If this be a hardship to the second-class female staff, how are the male staff to look upon it, when they, both first and second-class, receive only three weeks. Twelve days *without extra pay* fall to be deducted from these three weeks for the performance of Sunday duty, leaving nine days as the total annual leave of the male staff, as against twenty-one days for the first-class females and fourteen days for the second-class.

Previous to this concession being made to the female staff of the first-class, the female staff, as a whole, actually enjoyed five clear days' longer annual leave than the male staff.

Does this state of affairs exist at any of the other large provincial offices? If so, what is being done to remedy this great injustice to the second-class female staff, and still greater injustice to the male staff?

Hoping this will call forth an expression of opinion as to what action should be taken,—I am, &c.,
AUDI ALTERAM PARTEM.
Edinburgh, April 12.

A CHAT WITH CALCUTTA.

SIR,—Your ably-written article, "A Chat with Calcutta," has an almost fascinating interest for me. From an early age I have felt a specially deep interest in the electric telegraph—at first in reading about it, afterwards as a practical telegraphist. I have worked a circuit in district offices for many years, as well as a few at TS long ago, and have studied the general features of the science of electricity from current literature, lectures, and otherwise. I cannot call to mind *ever* having heard of such a circuit as London-Calcutta being worked, and quite agree with you, sir, that such working is so bewilderingly marvellous as to be in a sense miraculous, more especially with a direct writer, and at such a speed as twelve or fourteen words a minute. Here is "Transmission of Power to a Distance" indeed!

Might I be pardoned for suggesting that (judging by myself) a few words relating to the total resistance involved in telegraphing through to Calcutta from Old Broad-street (certainly not less, I imagine, than thirty or forty thousand Ohms), the number of cells and form of battery, and the amount of cable and of buried wire included in this unparalleled circuit, with an idea of the route followed, would be very acceptable, and add much to the pleasure derivable from the perusal of "A Chat with Calcutta." It strikes me that it might be feasible to work telephones on such a circuit. Do you happen to know if the experiment has been tried? I once read in a little book, "All about the Telephone," that conversation had been carried on between the Persian Ambassador in London and the Shah in Teheran, by the Indo Company's route; but I never heard of such an experiment being repeated—nor, indeed, ever saw any confirmation of the statement I refer to. With every kind wish for the success of the TELEGRAPHIST, I am, sir, yours truly,
MOLECULAR VIBRATION.

Answers to Correspondents.

MOLECULAR VIBRATION. Your queries will be answered in our next number.—C. B. H. We understand that at No. 27, Cheapside, a restaurant is lighted by upwards of eighty glow lamps supplied by primary batteries.—NIGGER. The only examination necessary is on the Morse instrument. The Printer is used on the Indo-European Company. I presume you know that very firm working is a *sine quâ non* on submarine lines.—EASTERN. The Siphon Recorder and the Mirror Galvanometer are the principal instruments employed by the Eastern Telegraph Company. This company trains its own clerks at Porth-curno.—CWMRO. A Morse key can be obtained at the Postal Telegraph Stores for 10s. It would not be new, but it would answer your purpose well enough. You had better give up the idea of joining the American-Telegraph service. The pay is bad, and the country is inundated with telegraph clerks out of employment. We have not received one-tenth of the required number of orders for "Dots and Dashes." The majority refuse to encourage literary talent in the service; they prefer patronising outsiders.—A SUBSCRIBER WHO HAD TO WRITE FOR HIS MAY NUMBER (T.S.). You will have no difficulty in obtaining the TELEGRAPHIST at T.S. in future. Copies will always be on sale in the cloak-rooms. We have appointed a new reporter, who will look after your interests, and provide you with better fare than "Legs, Legs, Legs."—A MEMBER OF THE B. AND A. CLUB. We shall be present at the annual sports, and form our own opinion of the gentleman you refer to. Perhaps he will turn out a regular Adonis in fleshings (?). At any rate, we will give you his portrait after the sports.—TORA (G.W.) You would get a better salary at a sub-office. A post-master at a London sub-office would give you the same salary you are receiving now, with board and lodgings. Why not try the foreign companies? See list of secretaries in the "Practical Telegraphist."

Queries.

PLEASE give the title and price of a good small book on railway signalling by electricity.—C. B.

THREE stations, A B and C, are in connection with each other on one wire: It is required that B shall send to A, while C receives from A, and *vice versa*—that is, that C shall send to A, while B receives from A. How would you do it?—C. B.

CABLE TELEGRAPHY.—According to recent trials of the speed of working on the Jay Gould cables laid across the Atlantic from Penzance to Canso, in Nova Scotia, 1,000 code words were sent from Penzance and received at the Canso station in eighty-one minutes, including all repetitions and corrections. The 1,000 words consisted of 7,288 letters, which is about equivalent to 1,558 words of five letters each, the average number for the English language. The above rate of transmissions is therefore equal to eighteen words of five letters per minute.

PROMOTION AND FAVOURITISM IN POST-OFFICE APPOINTMENTS.—Mr. Fawcett has been making a careful investigation into the causes of the complaints in the ranks of the Post-office as to the too rapid promotion of the relatives of surveyors and other influential officials. As they have been found to have a substantial basis in fact, some steps will probably be taken to bring promotion more completely under the supervision of the heads of the department in St. Martin's. As things are at present, the son of a rural surveyor may, after passing the easy preliminary examination required of all entrants into the postal service, receive some small clerkship in the letter-sorting or telegraphic branch under another surveyor who happens to be a friend of his father. After a few months' work in this very subordinate capacity, he may, at the age of eighteen or so, on the application of another friendly surveyor, be appointed, without any further examination, as his assistant, at a salary of £150 a-year, besides an allowance for travelling expenses, and with the prospect of rising to a maximum of £800. It is now suggested that before any young official can be appointed assistant-surveyor he must pass a special and stringent examination to prove his general fitness for the work, and in time this suggestion will probably be given effect to.—*Manchester Guardian*, May 16.

The Telegraphist

A MONTHLY JOURNAL OF

POPULAR ELECTRICAL SCIENCE.

Speed the soft intercourse from soul to soul,
And wait a sigh from Indus to the Pole.—POPE.

LONDON: TUESDAY, JULY 1, 1884.

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Prize Sketches.

No. VII.—LIFE IN THE TELEGRAPH SERVICE.

BY INNES KELTY.

LIFE in the Telegraph Service is about the same as in other branches of business, if viewed from the standpoint of individual idiosyncrasies; and yet, take it all round, there are, of course, certain clearly-defined lines which mark it off from life in any other trade or profession.

We have often been amused and much puzzled at the general appearance of a telegraphist. Now, in saying this much you must not misjudge our statement, but permit us to explain what we mean. We are speaking now of men who have been eight, ten, or twelve years in the service, and we will hazard the opinion that in such men there is a distinct peculiarity that to a close observer is at once noticeable. Should the latter meet a telegraphist in the streets we venture to assert he could at once pick him out. This peculiarity is scarcely expressible in words, and yet it is *in him*, as sure as the complementary colours are in the white beam of light. Can it be his work which lays its impress upon him in such a manner? Just possible it may be; for if you recollect what his labour is you will readily find he is really neither clerk nor mechanic, in the truest sense of the word. This hour he is busily employed transcribing a message delivered to him in Morse language by his dear "pony-sounder," or writing it from slip that has passed through a "Wheatstone automatic," while the next hour he is hard at work pegging away with his key in the sincere, though vain, attempt to beat time as it flies by keeping down delay.

The variety of his work, you will see, is so great, and the difference so marked, that the man is certain to manifest somewhat of this incongruity in his general habits. Any one who has mingled much with the junior telegraphists, say of three years' service, must have been often questioned by them as to the reason why "our fellows don't look like other clerks," &c.

Take the service, however, all round, and we do not think you will find a happier, more genial, or more social acquaintance than the modern telegraphist. Life in the service has its light and shade, its joys and its discomforts, although the wisest course is to always try to look upon the sunny side; and in estimating the worth of one's situation, we must not forget to compare it with that of those who are lower in the social scale.

Mr. Editor, you have no idea, sir, of the many little pleasantries we telegraphists enjoy amongst ourselves. The amusing telegrams that pass through our hands give us many a laugh, while the errors made by our fellow-workers of less experience than ourselves create no little amusement. It is really a case of acting upon the Apostolic injunction, that the strong should help the weak. Many an amusing and possibly serious error would pass out to the public were we not to act upon this principle. What would the feelings of the husband have been had he read such a telegram as the following from his mother-in-law: "Annie was confined of a *deal* boy this morning"? Then, too, we have just as peculiar messages from the public. Imagine the sensation in the receiving telegraphist's mind as he

hears the armature of his sounder signalling the following: "Unto us a child is born nine feet long and four feet broad." Yet it was quite correct; probably an order for a "motto" for a Church altar, and giving the length required. You, of course, have heard of that amusing error in a message on the morning of the late Pope's burial in St. Peter's, in Rome, wherein his Holiness was stated to have been buried in saltpetre!

The language and terms used in telegraphy become the second nature of a telegraphist, so that you will not be surprised to hear of a "masher" in the service receiving an anonymous note as he sat at his circuit, with a collar two inches high round his neck, asking him to "reduce ten." A sharp and ready-witted answer was once given to a member of the staff, who has "the gift of the gab," by one who had been vainly trying to get a word in sideways. When the fluent one did stop, the latter immediately said "N.U.G.," which, of course, you know, signifies "Not up, go on."

There is one side of life in our service which is frequently overlooked, and that is the palpable fact that a telegraphist is not an automaton. To-day he is probably at 212°, and is rattling his ten, eleven, or twelve messages off in a quarter of an hour, while to-morrow he is at 32° or zero, and, do what he may, he cannot exceed eight in the same time. However this may be accounted for or regretted, the fact remains and will always do so. By-the-way, I may mention a Wheatstone transmitter is not always constant, and, by reason of faults or temperature or climatic changes, frequently differs in speed.

The work of telegraphy is really pleasant and attractive. What can surpass the feeling of power and command that passes over one, as he handles his single or double-current key, and realises the mighty power he possesses of directing and controlling that marvellous and mysterious force, the Electric Current?

With a touch of the key that unknown force obeys him more readily than the vessel its rudder, or a charger its reins. Its docility is wonderful! How attached we become to the little "sounder," or to the "single needle." We develop quite an affection for them. The service, however, is still in its infancy. There has not been time to tabulate results as to the effects work of such a distinctively nineteenth-century character has upon the human frame. The telegraphist is in the fore front of the busy, rushing, restless, activity of commercial life of to-day. All his nerves are constantly on the stretch while he is at work, and terrible must be the strain on his nervous mechanism. How it will end the future only can tell. At present, it makes him very very subject to irritability and hasty temper.

He needs to guard closely against such a temptation. No wonder, therefore, that he soon loses his temper in working the wires, and quarrels break out between clerks at distant stations. How instinctively they know the very best means to annoy one another if so disposed. Such strange phrases as "Read," "Get a postman to help you," "Get clerk," &c., from sending-clerk to receiver at the other end: or, "Send better," "Try your other foot," &c., from receiver to sender, are frequently to be heard on the instruments. Of course, such remarks are prohibited and severely dealt with if brought before headquarters. Still, they do occur. Much gentleness and patience are needed to prevent quarrels and obstructive working. If we could always remember it takes two to make a quarrel, and that quiet, steady working wins everywhere, there would be fewer sheets of foolscap used. We ought not to deride irregularity forms, because they are the means by which the staff becomes acquainted with the numerous and generally well-arranged rules of the department. Many a "sheet of blue" requesting a gentleman to "note a caution," or asking his explanation as to "so-and-so," has been the round of the ladder by which he eventually attained that enviable position of exemption from "reports," gained by careful and intelligent working of the lines laid down by his superiors.

Still, working telegraphy is a terrible strain on the system, especially at a Duplex (key or automatic). Failing currents, earth contacts, unsteady balance, with probably an erratic worker at the other end of the wire, combine to worry and harass the poor fellows almost out of their minds, while Wheatstone working with its high speed, sending the messages off before they can be timed and arranged in order, and "the acknowledgments" seen to, creates quite a continuous attention.

How nobly and energetically the work is cleared off after stoppages can only be appreciated and understood by those who have seen it performed.

The Department believe in strict punctuality, and we think we are safe in asserting there is no other profession where keener attention is paid to this. To their credit, however, be it said, they are just as impartial in permitting the staff to leave promptly at the hour their duties are up. Of course, it is a case of "wheels within wheels." If the "coming-on" staff is prompt to time, it follows that the men they have come to relieve are bound to be

smart in getting off. Of course, Mr. Editor, there are a few laggards or drones *who cannot be punctual*. They try and try hard to get "on duty" as the clock strikes, but it is of no use, they are certain to drop in just a few minutes late with the inevitable result of getting "noted." This habit of punctuality, so firmly and surely ingrained into him by the department from his youth, makes the telegraphist a reliable man in any business or social appointment, while at the same time it makes him a terrible foe to all waste of time, or slothful companions and acquaintances. His business habits and domestic affairs are all methodical. He is trained to have a method in his manner of working, and hence exhibits this trait in social life.

The one great drawback to our pleasure is the Sunday labour we are obliged to take a turn of. Happy he who can get a substitute for his duty on the Day of Rest. He returns to his work on the Monday with greater zest and a happier and more cheerful air. The day's break in the monotony of daily toil seems to have braced the entire man, while the instruments appear to be more attractive and look better.

Of course, life in the telegraph service depends upon the colour of the glasses the telegraphist uses in looking at it. But, on the whole, we think one and all will unite in praising it for its happy, varied experiences; its amusing and instructive information; and its sure and steady development of excellent and abiding traits of character in the lives and habits of its devotees.

OCEAN TELEGRAPHY.

By WM. MAVER, JUN.

PART II.

TO many land telegraphists, and also to those not connected intimately with telegraphy, but who have a fair knowledge of the manner in which land lines are worked, the method by which messages are sent over the cables is a mystery, and the question is frequently asked by such persons, Are the methods employed in submarine telegraphy for the transmission of business the same as on land lines? To this I would reply that they are not; and as there appears to have been quite an interest developed lately in this subject, I shall now endeavour to describe plainly the manner of working submarine cables.

It was found early in the history of submarine telegraphy, that the detrimental effects of a certain law of electricity were so much intensified on cable circuits that unless methods could be devised to compensate for or obviate these increased detrimental effects, ocean telegraphy could not be, commercially speaking, successful.

Before proceeding to describe the different methods by which signals are commonly sent and received on submarine cables, it will be advisable to devote some time to the consideration of this law, and the effects resulting therefrom; and this is rendered all the more necessary from the singular fact that the very law of electricity which principally prevents the successful operation of the cables by ordinary methods, is availed of to operate them successfully while using other methods.

This law or action of electricity is termed induction, and the effects of the law, so far, at least, as the transmission of signals through a cable is concerned, are termed "retardation" and "prolongation."

It is a well-known fact, in connection with electricity, that when a body is charged with electricity from any source whatever, that body will attract in any adjoining conducting body a certain amount of opposite electricity. That is, if the first body be charged with, say, positive electricity, it will attract in an adjoining conducting body a certain amount of negative electricity.

The amount of electricity thus attracted in an adjoining conducting body will depend on the amount of electricity in the charging body, the nature of the substance that separates them, and also the distance between them.

The electricity thus attracted in the adjoining body is called induced electricity, and the action which produces it is called "induction."

We cannot interpose any substance between such bodies which will prevent "induction."

All substances, however, do not permit the inductive influence to take place through them with equal facility. Generally speaking, the least inductive effect is produced when simple air intervenes between the bodies. The greatest when india-rubber, gutta-percha, and mica are interposed.

The facility with which substances allow this inductive influence to act through them is termed their specific inductive capacity, air being the standard. Thus, if we call the inductive capacity of air 1, the specific inductive capacity of india-rubber, gutta-percha, and mica, will be about 3, 4, and 5 respectively.

It will be remarked that these three latter substances are all good insulators. In fact, as a rule, all good insulators have a high inductive capacity.

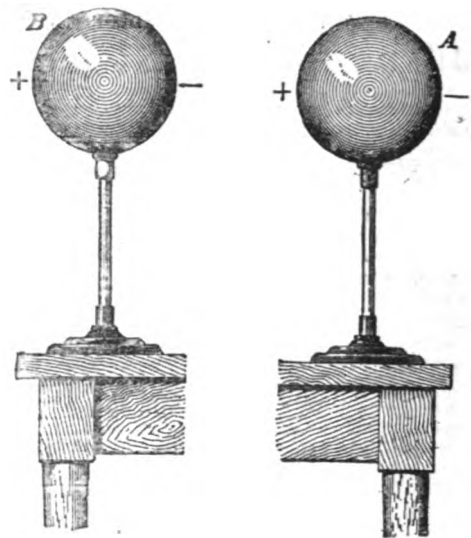


Fig. 3.

In Fig. 3 let us suppose that the spheres *A* and *B* are two metal plates, supported by insulated stands.

Let *A* be charged with positive electricity from an electrical machine or any other source. If *B* be now brought close to *A*, it will be found that *A* will take up more positive electricity, because the positive electricity on *A* has attracted a quantity of negative electricity on the side of *B* nearest *A*, has repelled an equal amount of positive electricity to the remote side of *A*, and in the effort of the two opposite electricities on *A* and *B* to unite, they have been gathered or condensed upon the sides of the spheres nearest each other.

An instrument called a condenser, much used in multiplex telegraphy and fast automatic telegraph systems, is constructed on the above principle.

A condenser, generally composed of sheets of tin-foil connected alternately to a battery wire and to the earth, as seen in Fig. 4. Each sheet is insulated from the other by some insulating substance, preferably paraffined paper, or mica, on account of their thinness and high inductive capacity.

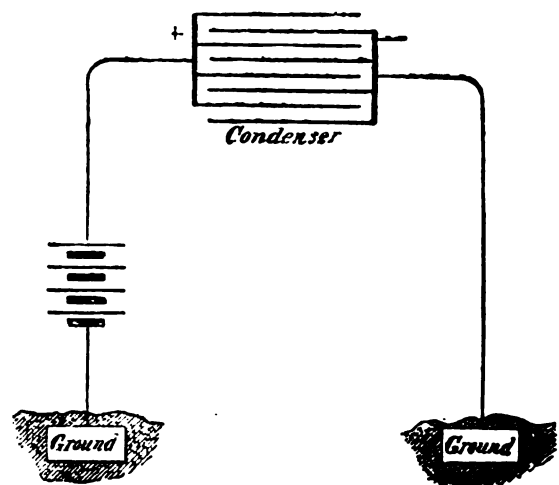


Fig. 4.

Supposing the lines in Fig. 4 to represent the foil, and the spaces the insulating material, the plan of the condenser will be understood. The current passing to the plates next the battery charges them, and this charge induces in the plates connected directly with the earth electricity of an opposite polarity, which in turn condenses more electricity in the battery plates, accumulating therein

a charge in proportion to the strength of the battery and the number of plates in action.

If a galvanometer should be placed in the wire connecting the right-hand plates to the ground, as in the figure, deflections of the needle would show that momentary currents were being induced in that wire at each make and break of the battery, or at each change of polarity of the battery. In the latter case the deflections of the needle would be to the right or left according to which pole of the battery may be presented to the plates.

Overland wires act in a measure like condensers; that is, when they are charged with electricity they tend to attract electricity in any neighbouring conductors, such as wires strung on the same poles, &c. Indeed, it is quite common to be able to read messages on wires on which there may be no battery whatever, which is almost entirely the effect of induction from wires which are in connection with batteries.

The effect of induction is not, however, anything like so great on land lines as it is on submarine cables; for, as the copper conductor of a cable is generally insulated by gutta-percha, an excellent insulator, but one which, as we have seen, has a high specific inductive capacity, and as the outer coating or armour of the cable, and the water in which the cable is submerged, act as ground plates, the cable becomes in reality a huge condenser.

Thus when a cable is charged with a certain polarity it induces opposite electricity in the outer coating, and the copper conductor is enabled to take up a greater charge.

This action takes place all along the cable, one portion of it after another being acted upon; hence the full effect of the charging battery does not reach the distant end for an appreciable time.

Thus if the ordinary Morse instruments were used on the Atlantic cables, it would take about three seconds from the time of battery contact until the relay at the distant end became magnetised sufficiently to record a firm signal. This effect is called retardation. When the battery contact is broken the line discharges itself in the same comparatively slow manner; the relay, therefore, does not lose its magnetism for the same period of time that it required to become fully magnetised. This is called prolongation. From the joint action of retardation and prolongation, it has been found that not much over one word per minute could be transmitted by the ordinary Morse method.—*Electrical World (New York).*

(To be continued.)

TELEGRAPH CLERKS AND SUNDAY LABOUR.

THE fourth annual conference of the Postal Telegraph Clerks' Association has just been held at Birmingham, and attended by delegates from the various telegraphic centres. The Chairman, in opening the conference, spoke of the good work which the association had done in the past, and said he looked forward with hope to the future. He trusted that under the revised rules all clerks would see their way to become members, and thus help on the great end they all had in view—viz., to improve the service, and help each other to bear one another's burdens. He thought the members should take every opportunity of making known the benefits of the association, and try and induce all clerks to join the insurance branch of the society. The conference then proceeded to consider the question of Sunday labour, which was discussed at great length. It was the most irksome duty which a telegraph clerk had to perform, it was the cause of more discontent than any other grievance, and not one of those engaged in the recent movement had doubted that Mr. Fawcett would hesitate to remedy the grievance of Sunday duty. On this question they had not only public opinion in their favour, but right on their side; yet the provincial clerks had been treated in a novel and peculiar way. They had asked either for payment for their Sunday labour, or for an equivalent in annual leave, as the duty could not be abolished entirely; and what was the result? The answer they received was this—the London clerks will continue to receive extra payment for all Sunday work, and, as heretofore, the females will not be called upon to do any work on Sundays; but a certain number of hours will be added to the weekly duty of the male clerks in the provinces, and they will be required to perform the hours which are thus added to their weekly duty on Sunday, and so the provincial clerks will no longer be able to say that they work their Sunday duty gratuitously. It was a settlement of the question, certainly, but it was a settlement which had proved irritating to the service, for the provincial clerks felt that the London staff had been treated with fairness, while they had not. It was a settlement which might have tended to promote ill-feeling between the male and female clerks, and it was to the credit of the former that they had continued, notwithstanding the way in which they had been treated, to assist the ladies in every possible way, with the result that the

females had now obtained an extension of their annual leave. It was a well-known fact that all branches of labour, skilled or unskilled, when required to perform Sunday work in addition to their ordinary six days' labour, received extra, and in some cases double, pay for such work, and why such extra payment was allowed in London and refused to the provinces had not been explained. This question was not a new one; it had worried the telegraph service for ten years or more, and it was high time it was properly settled. The conference unanimously resolved to again lay the subject before the Postmaster-General. We understand the Edinburgh telegraph staff intend to hold a meeting on Saturday week to decide as to what steps shall be taken with reference to the Sunday labour question.—*Edinburgh Daily Review.*

THE HEALTH EXHIBITION.

BY A LONDON TELEGRAPHIST.

THIS Exhibition has already been visited by more than half a million of sight-seers; and there are few who can honestly say that they have come away from it without seeing many things which were both interesting and instructive.

Our advice to telegraphists, who feel inclined to visit the Exhibition, is to form a general idea of the objects which meet the visitor's gaze at every turn, before taking a minute inspection of any one department. The majority of the fair sex may spend an hour or two profitably in the Dress Section, the chief part of which is to be found in the East and West Quadrant. In the Historical Dress Department there are objects which, although specially attractive to the female class of visitors, and also of considerable interest to the male sex.

This section consists of numerous wax figures dressed in costumes which were fashionable in the periods they represent; and a trusty record has thus been taken of the covering of the human race from the reign of William the Conqueror down to that of the Prince Regent—a period of about 750 years.

Several of the costumes, especially the headdresses of the figures, are what would now be called "hideous;" while others are extremely handsome and becoming to their wearers; and many of the ancient dresses were more elegant and healthful than those worn at the present time.

Ladies who visit the Dress Section (where is the lady who would neglect anything pertaining to dress?) should not forget to look out for the models exhibiting the injurious effects of tight-lacing, and the wearing of boots and shoes with pointed toes and high heels. In order to show the evil of the tight-lacing process, in which ladies rejoice even in these days of science and art, a model of a lady's liver is shown in its natural size, and then reproduced representing the liver distorted by tight-lacing. One glance at this ugly object, and another at the deformed feet which may be seen in the same case as the liver, ought to be enough to convince the most stubborn belle of the danger of tight-lacing and the wearing of high heels and pointed-toed boots and shoes. In the same section the military uniforms are equally interesting to both sexes.

We noticed dress first because it has much to do with health, and needs great improvement in the present day. Let us now get some idea of the Food Section.

Every one who goes to the Exhibition cannot help seeing something of this department, and gaining a deal of useful information on the subject. Food of all kinds and all shapes may be viewed in the South Gallery, as the visitor enters the building from the Exhibition Road entrance.

Is there anyone who prefers bad food to good? No one, surely!

By passing through the many sections of the Exhibition both sexes can, in a few moments, form a correct idea of how and where good food may be obtained, from the fare of the peasant to the luxuries of the epicure.

In the body of the South Gallery a variety of stuffed birds and animals suitable for the table are to be seen; also seeds, roots, fruits, vegetables, provisions, and drinks of all kinds, palatable to man and beast, now in use.

The most listless visitor cannot come away from the Food Section without tasting or seeing something that pleases him.

Having taken the two great divisions, viz., Dress and Food, let us find out the sections especially adapted to the tastes of the professional gentleman, the business man, and the artisan.

The Scholastic Department is in the East Central Gallery. In it may be found the germs, as it were, of all science, and plans of the many methods for bringing forth dormant genius, and for making the youthful mind strong and healthy may here be seen. Beginning by looking at the representations of the Kindergarten system (amongst which models for teaching drawing, cooking,

and many other useful things are to be observed), we pass on till we come to the work of amateur artists, scientists, and mathematicians, who, having been started on a good foundation, are now on their way to maturity. A due portion of the above collection is devoted to the ingenious systems by which the deaf and dumb are instructed. Next to the mind's health, that of the body ought to be considered. Health of man's physical structure is represented by the East Central Gallery, where the Gymnasia and athletic appliances are to be seen. Telegraphists who take special interest in sports and manly exercises should not fail to be present at Miss Bergman's demonstrations of gymnastic training, on Mondays and Wednesdays, given by the Board School children under her supervision.

The antiquary will thoroughly enjoy "Old London," which lies near the Queen's-road entrance.

The bread and water sections should be visited by every one, for if these are not pure good health is out of the question.

The musician has only to enjoy the fresh air in the central grounds of the Exhibition, during the afternoon or evening, and his delicate ears will be gratified by well-trained bands playing popular airs.

The naturalist can thoroughly enjoy the aquarium, in which many interesting specimens of marine and river fish may be seen in their natural state. In conclusion, it must be said that the whole management of the Exhibition is excellent, as throughout the day, light and ventilation is good, and, considering the number of visitors, very little inconvenience is caused by over-crowding. Any one with the slightest imaginative power could easily fancy himself or herself in fairyland in the Exhibition grounds after dusk, for then lights of various colours may be seen trimming flower-beds and winding round the stems of trees in all directions, as the visitor looks round on the gardens; but, on looking up, a far grander sight meets the wanderer's gaze. Chinese lanterns of grotesque shapes are visible, apparently suspended in mid-air, throwing forth many-coloured rays, and making the fountains and lakes look like liquid gems.

The last tinge is given to the fairy-like scene by one of Nature's forces called electricity, with which most of our readers are already acquainted, and by its means the illumination is rendered too brilliant for words to express. All these wonderful and interesting sights to which the telegraphist's attention has been drawn may be enjoyed for payment of the mere entrance fee; and we feel sure that every one who visits the Health Exhibition will neither regret the time nor the money spent there in quiet recreation.

THE TELEGRAPHIST ABROAD.

TEHERAN, pronounced Tehraun, the capital of Persia, where the Indo-European Telegraph Company employ a number of English telegraphists, is a province of Irak-Ajemee 70 miles south of the Caspian Sea, and 210 miles north of Ispahan. Lat. 35° 42', long. 51° 20' 50" E. Stationary population estimated at 10,000, but during the residence of the Court in winter it is 60,000 and upwards. It is about five miles in circuit and enclosed by an earthen wall flanked with towers, a glacis, and a dry trench. The external appearance is picturesque. Its mosques, colleges, and caravansaries are in good repair, and it has well-furnished shops and bazaars, with some large palaces of the nobility; but its dwellings are mostly built of earth, the streets are mean and wretchedly paved, and in summer it is so unhealthy that the Shah and the upper classes leave it to encamp on the plains of Sultaneeyah, about 150 miles N.W. The Royal citadel is extensive, and comprises, besides the Royal harem and apartments, a magnificent saloon, the public offices, quarters for the Royal guards, numerous baths and gardens. On a height near the city is another Royal palace with fine grounds. Teheran has manufactures of carpets and iron goods; its vicinity is fertile, and covered with villages. It became the Persian capital towards the end of the last century. On its S. side, and about 25 miles E., are extensive ruins, and one of these localities marks the site of the ancient Rhagæ.

The Hire-Purchase System of Furnishing conducted by NORMAN & STACKY commends itself to all classes. It combines real economy on sound commercial principles, with strictly private arrangements, and is free from all the objectionable formalities which attach to dealers and others. No interest or fees are charged, and payments can extend over 1, 2, or 3 years. The wholesale firms embrace the best manufacturers, who have large stocks for selection, and no additions are made to the ordinary selling prices. Intending purchasers should call or send for particulars.—Offices, 11, Queen Victoria-street, E.C.—[Adv't.]

OUR ELECTRICAL INDUSTRIES.

THE NEW ATLANTIC CABLES.

A VISIT TO THE WORKS OF LATIMER CLARK, MUIRHEAD, & Co.

IN our last issue we gave a brief popular account of the manufacture of the Bennett-Mackay cables, and this month we continue the important subject by describing the duplexing apparatus which has been made for the successful working of the cables by the eminent firm of Latimer Clark, Muirhead, & Co. Before dealing with Dr. Muirhead's system we think a few particulars about the early career of the head of the firm we visited last Thursday may interest our readers, for there are many of the present generation of telegraphists who are curious to know something of the shining lights who are still amongst us. It is the rule to get enthusiastic over a great man's works when he is dead; but we prefer to honour those to whom honour is due while they are still in the flesh. Years ago Mr. Latimer Clark was engaged with his brother in raising the Tubular Bridge over the Menai Straits when Mr. Ricardo was Chairman of the Electric Telegraph Company, and when the whole science of electricity was in a state of chaos. Mr. Edwin Clark, a noted mathematician at Cambridge, had given considerable attention to the subject, and his intercourse with Mr. Robert Stephenson at Menai Bridge led him to study it still further, and in this he was encouraged both by Mr. Stephenson and Mr. George Bidder, C.E., who were Directors of the Electric Telegraph Company. Of course this could not be done without treading on the heels of "the Professor," who made a practice of claiming everything brought forward concerning telegraphy; if his claim was promptly defeated, he pooh-pooled it, and placed every impediment in the way of its employment. But for this, the talents of Henley, Highton, and the Brothers Bright would have been secured to the old Company. However, the public were benefited by it in the long run. Mr. Edwin Clark proved a very tough subject to deal with; he knew his work thoroughly; he saw that the Electric Telegraph of 1849 was of the crudest and most primitive design. The long, oscillating needles, the mode of commutation, the deficient insulation, all alike devoid of principle, astonished him, and upon a complaint being made to him that there was little prospect of promotion in the Telegraph Service he replied, "There are many fortunes in it, and I am going to make one."

There were other matters then engaging Mr. Clark's attention, notably that of testing the strength of iron plates, their use for armour-plating, and so forth: and as much, if not everything, he suggested to the Board of the Electric Telegraph Company, was upset, as soon as his back was turned, by the "Professor's" interest, he determined to place his brother, Mr. Latimer Clark, in charge of the Engineering Department, and with him Mr. Charles Cartoys, and these gentlemen soon made their influence felt throughout the service. The orders received were often from Mr. Clark in short but firm language. Thus a letter by post:—

"Thursday.

"Clark, London, to Culley.

"Push on your insulation; men still at Weedon; ought to be up to Tamworth now. Don't write and explain."

Mr. Edwin Clark and his brother Latimer were so intimately associated, both so similarly talented, and so alike in style that it seemed to be their wish that neither should claim the honours of the day, and, though in every detail some change of importance was made, it was simply said to be Clark's, and no one seemed even to inquire from which of the brothers it originated. Determined to set at rest the question as to retardation, they had the extra large wire erected from London to Rugby. They proved by this experimental wire that it was the battery and the insulator to which their chief attention should be paid. From that day every encouragement was given to the employés, and Varley and Fuller found that their time had arrived, and they received the credit until then denied them.

After the laying of the Atlantic telegraph, Mr. L. Clark joined Sir Charles Bright in carrying out the Red Sea telegraph, and they were associated together for a considerable time as acting and consulting electric telegraph engineers in Victoria-street, Westminster.

Another star was now rising. Mr. Muirhead, one of the most respected and kindly officers of the old Electric Company, had given his son a high-class scientific training. Whether directly or indirectly, ~~as by force of example, it is certain that the guiding hand of the Clark was visible in this respect, and that Dr. Muirhead's high attainments were as eagerly sought for as they were~~ gladly secured by the brothers Clark. The whole of the submarine cables throughout the world have been rendered more valuable by the joint exertions of Clark and Muirhead, and the enterprising firm of Latimer Clark, Muirhead, & Co. well deserves the success

which has attended its efforts to introduce the best form of instruments and the most perfect mechanism in the working of telegraph lines of every description.

The subject which engaged our attention last Thursday was Dr. Muirhead's highly scientific method of making an artificial cable.

It is well understood by electricians, that to establish a perfect balance in duplex working, the artificial cable should electrically be a perfect representation of the actual cable, not simply in resistance but also in capacity.

In order to carry out this in the Muirhead patent system of duplex working, the artificial cable, or as termed by manufacturers the inductive resistances, are composed of a number of plates of tinfoil and paper, similar in construction to ordinary condensers, but with this exception, that whereas in a condenser the sheets of tinfoil are alike in the inductive resistances, each alternate sheet of tinfoil is cut into a gridiron pattern, making a continuous strip of tinfoil; a number of these are placed alternately with plain sheets of tinfoil interspersed with paraffined paper, the continuous strips are joined alternately together, so as to make one continuous strip, which strip represents the conductor of the cable, and these strips are so regulated in their width that the capacity of the condenser joined by the strips and plain plates of tinfoil exactly correspond to the capacity of an equal length of cable represented by the resistance of the strips.

By this means a most perfect representation of the actual cable is produced, and results obtained on cables where this system has been employed for duplex work have most fully borne out the value of the system, giving an increase of speed over any other system.

Once having a reliable artificial line, duplexing may be carried out in any of the well-known methods, either by means of the "Bridge" system or the "differential."

An interesting exhibit of the duplex apparatus about to be employed on the Bennett-Mackay's cables was exhibited at the *conferenza* of the Royal Society, held at Burlington House. This is the first instance that duplex telegraphy has been publicly shown in actual work on an artificial cable of such great magnitude. The pile of boxes composing the artificial line took up one end of the library, where the apparatus was shown at work.

It is estimated that for duplexing the two Bennett-Mackay cables now being laid, it will take for the inductive resistances and condensers rather more than five acres of tinfoil and over twenty-one acres of paper. This will give some idea of the magnitude of work the contractors, Messrs. Latimer Clark, Muirhead, & Co., Limited, have undertaken.

They have most stringent tests to which they subject every condenser and induction resistance before leaving their factory, and anything that does not come up to their standard of excellency is broken up.

Messrs. Latimer Clark, Muirhead, & Co. have been fortunate in securing the services of Mr. Le Neve Foster, a gentleman of great experience in electrical matters. Mr. Foster was formerly associated with the India-Rubber Company, and many foreign cables were successfully laid under his directions. The fact that so eminent a firm should intrust the whole of their department to Mr. Foster's superintendence speaks volumes for that gentleman's talents as an electrical engineer. The condensers for the artificial cables have been made under his eye, and tested by himself, and we have not much fear of the result when the instruments are joined up and the first message is handed to the operator either in England or America.

NATURAL ELECTRICITY.—LIGHTNING.

LIGHTNING possesses the same properties as the ordinary electric spark, exhibiting them with a power proportional to the enormous quantity of electricity which is at work in the production of a flash. Thus, it heats intensely any conductor not sufficiently good to carry it readily, fusing bell wires, chains, thin rods of metal, where it passes along them, and producing those molten tubes known as fulgurites when it strikes the earth and along its path inward. It sets combustibles on fire. The passage of a flash can also magnetise, demagnetise, or reverse the magnetism of steel, and can produce chemical effects, an example of which is found in the formation of ozone, nitric acid, and nitrate of ammonium in the air. Its mechanical effects are shown in the splitting up of trees, stones, &c., when it strikes them. The physiological effects are too frequently recognised. When lightning strikes an animal it usually kills it. There are, however, instances in which death does not ensue. Generally, the spark passes through the body, tearing and burning it at the place at which it enters and leaves, frequently setting fire to the clothes, and nearly always

burning up the hair on all parts of the body. When death does not follow the stroke, deafness, loss of sight, dilatation, and loss of contractibility of the pupil of the eye are frequently temporarily produced. Instances are known on the other hand in which weak strokes of lightning have cured some of diseases under which they were previously labouring. As to the number of persons killed by lightning, M. Arago estimated it in France at 69 in the year. M. Baudin, however, according to a research quoted by De la Rive, showed that between the years of 1835 and 1852, no less than 1,308 persons were killed.

THE TELEGRAPHIST'S ELECTRICAL AND SCIENTIFIC BIOGRAPHY.

IT is with much pleasure that we comply with the wishes of the large number of our correspondents who desire to learn something more about the father of electro-magnetic telegraphy. To the majority of telegraphists in this country the familiar word "Morse" has been nothing more than a mere name given to a certain kind of instrument; but in America the memory of this great man is almost worshipped, and a large volume has been published devoted exclusively to the life and labours of Professor Morse.

The following account from the "Encyclopædia Britannica" will be read with interest by British telegraphists who ought to be reminded that up to the close of his long life Morse never failed to acknowledge the debt he owed our illustrious Faraday, whose brilliant discoveries in electro-magnetism were the stepping-stones to Morse's glorious invention.

MORSE SAMUEL FINLEY BREESE, artist and inventor, was born at the foot of Breeds Hill, Charlestown, Massachusetts, on 27th April, 1791. His father was the Rev. Jedediah Morse, D.D., the author of "Morse's Geography." At the age of fourteen Samuel Morse entered Yale College. Under the instruction of Professors Day and Silliman he received the first impulse towards those electrical studies with which his name is mainly identified. In 1811, Morse, whose tastes during his early years led him more strongly towards art than towards science, became the pupil of Washington Allston, then the greatest of American artists, and accompanied his master to England, where he remained four years. His success at this period was considerable; but on his return to America in 1815 he failed to obtain commissions for historical paintings, and after working on portraits for two years at Charlestown, S.C., he removed first to Washington, and afterwards to Albany, finally settling in New York. In 1825 he laid the foundations of the National Academy of Design, and was elected its first president, an office which he filled until 1845. The year 1827 marks the revival of Morse's interest in electricity. It was at that time that he learned from Professor J. F. Dana, of Columbia College, the elementary facts of electro-magnetism. As yet, however, he was devoted to his art, and in 1829 he again went to Europe to study the old masters.

The year of his return (1832) may be said to close the period of his artistic and to open that of his scientific life. On board the packet ship *Sully*, which sailed from Havre Oct. 1, 1832, while discussing one day with his fellow-passengers the properties of the electro-magnet, he was led to remark: "If the presence of electricity can be made visible in any part of the circuit, I see no reason why intelligence may not be transmitted by electricity." It was not a novel proposition, but the process of formulating it started in his mind a train of new and momentous ideas. The current of electricity, he knew, would pass instantaneously any distance along a wire, and if it were interrupted a spark would appear. It now occurred to him that the spark might represent a part of speech either a letter or a number, the absence of the spark another part, and the duration of its absence or of the spark itself a third, so that an alphabet might be easily formed and words indicated. In a few days he had completed rough draughts of the necessary apparatus, which he displayed to his fellow passengers. During the twelve years that followed Morse was engaged in a painful struggle to perfect his invention, and secure for it a proper presentation to the public. The refusal of the Government to commission him to paint one of the great historical pictures in the rotunda of the Capitol seemed to destroy all his old artistic ambition. In poverty he pursued his new enterprise, making his own models, moulds, and castings, denying himself the common necessities of life, and encountering embarrassments and delays of the most disheartening kind. It was not until 1836 that he completed any apparatus that would work his original idea, having been supplemented by his discovery, in 1835, of the "relay," by means of which the electric current might be reinforced or renewed where it became weak through distance from its

source. Finally, on Sept. 2, 1837, the instrument was exhibited to a few friends at his room in the University Building New York, where a circuit of 1,700 feet of copper wire had been set up with such satisfactory results as to awaken the practical interest of the Messrs. Vail, iron and brass workers in New Jersey, who thenceforth became associated with Morse in his undertakings. Morse's petition for a patent was dated September 28, 1837, and was soon followed by a petition to Congress for an appropriation to defray the expense of subjecting the telegraph to actual experiment over a length sufficient to establish its feasibility and demonstrate its value. The Committee on Commerce, to whom the petition was referred, reported favourably. Congress, however, adjourned without making the appropriation, and, meanwhile, Morse sailed for Europe to take out patents there. The trip was not a success. In England his application was refused on the alleged ground that his invention had been already published; and while he obtained a patent in France it was subsequently appropriated by the French Government without compensation to himself. His negotiations also with Russia proved futile, and after a year's absence he returned to New York. On Feb. 23, 1843, Congress passed the long-delayed appropriation. Steps were at once taken to construct a telegraph from Baltimore to Washington, and on May 24, 1844, it was used for the first time. Morse's patents were already secured to him and his associates, and companies were soon formed for the erection of telegraph lines all over the United States. In the year 1847, Morse was compelled to defend his invention in the courts, and successfully vindicated his claim to be called the original inventor of the electro-magnetic recording telegraph. Thenceforward, Morse's life was spent in witnessing the growth of his enterprise, and in gathering the honours which an appreciative public bestowed upon him. As years went by, he received from the various foreign Governments their highest distinctions; while in 1858 the representatives of Austria, Belgium, France, the Netherlands, Piedmont, Russia, the Holy See, Sweden, Tuscany, and Turkey appropriated the sum of 400,000 *l.* in recognition of the use of his instruments in those countries. In the preparations for laying the first Atlantic cable he took an active part, though the attempt of 1857, in which he personally engaged, was not successful. He died April 2, 1872, at New York, where his statue in bronze now stands in the Central Park. His instrument and alphabet are now used on 95 per cent. of the telegraph wires of the world.

DICTIONARY OF TECHNICAL TERMS USED IN TELEGRAPHY.*

ACCUMULATOR.—Another name for secondary batteries.

AMPÈRE.—The B.A. (British Association) unity of current.

AMPLITUDE.—The extent of swing, as in a pendulum, or the height of wave-motion; the strength of wave-action, as the loudness of sound, depends on this, while the character, as pitch of note, depends on wave-length or time.

ANION.—The electro-negative acid or chlorous radical of the salt or acid decomposed. Oxygen acid radicals as chlorine are anions.

ANODE.—The positive electrode or pole of a battery, the wire or plate connected to the copper or other negative element of the battery; the plate which leads the + current into a solution to be decomposed, and at which are set free the oxygen, acid radicals, and all - ions (anions). In electro-metallurgy it is usually formed of the metal to be deposited, in which case it is called the soluble anode or pole.

AIR.—The air space in which the electric light forms. It contains carbon vapour, and gives off the violent rays which render the arc light so steely in character.

ARMATURE.—The keeper of a magnet. *Armature of dynamo machine*; the part which, like the *keeper*, closes the magnetic lines of the field magnet. It is usually the moving part.

ASTATIC.—Without inherent directive power usually applied to pairs or reversed needles.

ATOM.—The supposed ultimate particle of the elements. There is still much confusion as to the atom and equivalent, which were formerly used for the same purpose, but modern chemistry attaches a distinct idea to the atom, which correlates it, not only to chemical affinity, but to heat and other forces.

BALLISTIC GALVANOMETER.—This measures a momentary current, such as a discharge of a condenser just as a ballistic target measures the impact of a shot. It requires a heavy needle presenting little surface to the air. The quantity of electricity is proportional to the *sine of half the angle of the first swing*.

BRUSHES OF DYNAMO MACHINES.—The collectors of the current.

CALORIMETER.—Instruments for measuring heat produced, for

electrical uses. They are, in fact, thermometers; but for measuring the heat produced in chemical actions, &c., very elaborate instruments are made, as described in treatises on heat.

CANDLE, ELECTRIC.—An arc light generated at the end of two carbon rods arranged side by side, and burning away equally. First made by Jablochhoff.

CANDLE-POWER OF LIGHT.—The legal standard for measurement of gas is a spermaceti candle of six to the pound, burning at the rate of two grains per minute.

CAPACITY.—The power of a surface or dielectric arranged as a condenser to hold electricity as "static charge." Its unit is the farad.

CASCADE CHARGING-IN.—The old term for Leyden jars arranged in series like voltaic batteries.

CATHODE.—The negative pole of a battery; the wire or plate connected to the zinc; the plate at which, in any decomposition cell, the cations or + ions are set free. In electro-metallurgy, the object upon which the deposit is to be formed is the cathode.

CATION.—Electro-positive elements and radicals which are set free in electrolysis at the Cathode. Hydrogen and metals in the order of the electric series are cations.

C. G. S. CENTIMÈTRE GRAMME SECOND CHARGE.—The measured quantity of static electricity accumulated on a conductor or a condenser.

CHLOROUS POLE.—A term sometimes used for the negative pole or cathode. A chlorous radical is that radical of a salt or acid which answers to chlorine in HCl—that is, it is the acid radical or electro-negative element or anion.

CONSEQUENT POLES.—Where intentionally or accidentally, two N. or two S. poles are formed together S—N N—S, in which case we have, apparently, a magnet with two similar poles at its ends.

CONSTANT.—A value which correlates individual cases to general laws. The constant of a galvanometer is the value in amperes corresponding to unit deflection; or it may be the resistance which, with a given battery, produces unit deflection.

COULOMBS.—The B.A. unit of quantity which passes in one second of an ampère current.

DECLINATION.—The angular difference at any part of the earth, between the nearest pole of the earth and the corresponding magnetic pole: it is the *variation of the compass*.

DENSITY.—"The quantity" upon unit area of surface, which varies on the one surface according to form and nearness of surroundings.

DENSITY OF CURRENT.—The same as with charge, in the case of electrolysis which materially affects the action and the quality of deposit. Heat in wires is also proportionate to the ratio of current and section of the conductor.

DIAPHRAGM.—A porous division between two liquids, through which electric current passes, and in which osmosis occurs; and an E.M.F. is produced as a result of capillary actions.

DIELECTRICS.—Non-conductors in which induction occurs, such as air and gutta serena.

DYNAMOMETER.—This means "force-measure," and is the proper name for an apparatus which measures mechanical power, such as that exerted by a rotating shaft or a belt. It is often, but wrongly, applied to Weber's galvanometer, which consisted of coils in place of needles suspended within other circular coils.

(To be continued.)

THE TELEGRAPHIST OF THE FUTURE—A FACT.—Probationer fresh from M—g—te S—t B—gs, showing slip to old telegraphist—"Look here, sir, this can't be right—H-e-i-g-h-t. Shouldn't it be E-i-g-h-t? You don't spell eight with a H?" Old telegraphist, piteously, "Oh, dear! oh, dear! the service is going to the dogs."

THE PHONOGRAPH.—The speaking phonograph is copied from the human ear. The vibrating diaphragm has a stylus connected with it, which impresses the peculiarities of vibration due to any particular sound upon a roll of tinfoil arranged to receive the impression. By reversing the process, the indentations and prominences of the tinfoil cause the stylus to fall and rise, which results in vibrations of the membrane, and these reproduce the original sound. These impressed sheets of tinfoil may be preserved or sent to any part of the world, and by putting them into a similar instrument may be made to reproduce the pitch, tone, and quality of the original sound thousands of miles or of years distant. By this instrument, voice may be phonographed as the face is photographed, and we may listen to the veritable voice of the dead, or preserve for future comparison the voice of a person from the first infant prattle to the feeble speech of old age. Public speeches and songs may thus be preserved and delivered indefinitely, or till the tinfoil wears out. In public libraries may be preserved languages of different nationalities spoken from century to century, with all the peculiarities of pronunciation, dialect, and brogue.

* From Sprague's "Electricity." By kind permission of the author.

Editorial Notes.

THE DINING-ROOMS AT THE CENTRAL TELEGRAPH OFFICE.—After reading the report of our correspondent and Mr. McGuire's letter, we could not help exclaiming, "Can such things be and overcome us like a summer's cloud without our special wonder?" Is it possible that in a great public establishment like the Central Telegraph Office, an efficient caterer cannot be found to provide a decent dinner for the clerks? We know that the English are bad cooks; but a plain meal can be prepared without the assistance of a French chef. There is something rotten in the existing management, and we should like to know who is really responsible for such a wretched state of affairs. The chief muddler ought to know that it is possible to provide a decent dinner for so large a number—properly cooked and served in clean utensils—at sixpence a head; but it is not the price that has stirred up the indignation of the staff. It is the abominable attempt at cookery, and the dirt which accompanies every meal. It is a well-known fact that the telegraphist of the present day, under the high-pressure system, is worked up to such a pitch of nervous tension that when he is released from his arduous duties for a brief interval, he naturally looks for something that will act as a sedative to counteract the influence of his work. Now what better sedative could be found than a tempting dinner? The hour of relief should be spent in the calm enjoyment of renewing his energies for the afternoon duties; instead of which he is made irritable by the sight of dirty knives and forks. Then the greasy paws of the servants make him feel like a passenger crossing the Channel when the steward is out of the way. The hypersensitive nature of the hungry telegraphist is sorely tried before his dinner reaches him, but when his nasty mess is presented to him (which only the imperious cravings of an empty stomach could induce him to eat) the climax is reached, and he returns to his work not calmed, not refreshed, not with renewed vigour, but with a mass of indigestible matter irritating the nerves of his stomach, which set up the pain called dyspepsia, or indigestion. What will be the result of such dinners? Physiologists say that we should never eat when we are out of temper. Moral: Never dine at T.S. if you would be amiable. Pathologists tell us that through eating badly-cooked and indigestible food we sow the seeds of terrible diseases, which are certain to develop sooner or later. Rheumatic fever was once believed to be the result of a chill; now it is an established fact that the chill is only the secondary cause or developer. Indigestion, which generates certain acids in the blood, is the primary cause. These acids may be eliminated in the usual way for a long time, but one day, through a shower of rain, or something that checks the secretions by contraction of the small blood-vessels, the poisonous acids may be retained in the blood, and fever ensues. Gout, cardiac disease, and other dreadful complaints may be traced to indigestion, and the indigestion itself traced to bad food or insufficient cooking. By tolerating such mismanagement the clerks at T.S. are risking sour tempers and a miserable old age; we, therefore, suggest a speedy reform. If the chief muddler will not resign, and if there is no chance of proper management, it will be the duty of the Department to interfere, and either undertake the direction of the clerks' dining-room themselves or hand it over to one of our big contractors, who will, we are certain, cater for so large a number at a reasonable price, ensuring cleanliness and comfort. As it exists, the Central Telegraph Office Dining Club is a disgrace which reflects on the government as well as upon the muddling committee and all persons concerned in its management.

THE LATE MR. EDWARD JONES.—It is with deep regret that we have to announce the death of Mr. Edward Jones, of the Central Telegraph Office, one of the most promising contributors to this journal. Mr. Jones, with very little training, would have made an excellent press-man. His letter, "The Telegraphist—a Vindication," which appeared in our second number, will now be read with melancholy interest by the many who knew him at T.S., for it is full of literary merit. At the time the letter appeared several competent judges, unassociated with telegraphy, expressed their opinion of Mr. Jones's literary abilities in flattering terms. The report in our June issue, under the heading "Central Telegraph Office," and the verses on a telegraph pole appeared only a few days before the author's death, and we were expecting another contribution from him for the present number. In an argument our lamented contributor was a powerful opponent, not easily beaten, because he was always armed with stubborn facts and reliable data. Richard III. said, "So wise so young do ne'er live long," and it is possible that Mr. Jones had over-taxed his brain. His physical energies were not equal to his mental powers. If the brain is the organ of the mind, it follows that a diseased brain must produce a diseased mind. Eminent doctors who have made post-mortem

examinations of the inmates of lunatic asylums, have proved that a diseased state of the brain-substance has always co-existed with a deranged intellect. Under the high powers of the microscope the delicate tissues of the brain reveal their true condition, and it is not difficult for the experienced pathologist to distinguish a healthy from a diseased brain. There can be no doubt in our mind that Mr. Jones's intellect was deranged when he committed suicide, and the verdict of the jury was satisfactory. We shall feel the loss of so able a contributor as Mr. Jones, and we avail ourselves of this opportunity to express our heartfelt sympathy for the friends and relations of that clever young man.

POPULAR SCIENCE.—We are very pleased to learn that our efforts to engender a liking for popular science have met with almost universal approbation. If our friends will refer to Odin's account of the German telegraphist, in No. 6, they will find that it would be impossible to discover a telegraph clerk under the Prussian administration who could not pass a very severe examination in the scientific branches of his art. A telegraphist in Germany is recognised as a man of science, and treated with the respect due to superior education. Why should the British telegraphist be deficient in scientific knowledge when he has so many facilities for learning all about the principles of the instruments under his charge? Not so long ago we asked an old telegraph clerk if he knew the kind of battery used in his office. His reply was, "Oh, it's something in a long box filled with blue stone" ! ! ! ! ! That was a very unscientific answer, and reminded us of the photographer who told us he didn't know that white light was made up of the colours violet, indigo, blue, green, yellow, orange, and red; and when we asked him why he used red and orange glasses for the window of his "dark chamber," he replied, "Because it spoils the picture if you have a white glass window." We did not expect the photographer to explain the undulatory theory of light, nor did we hope to find in him a votary of the illustrious Tyndall, but we did expect the "artist" to know which of the rays decomposed the chemical solution and produced the picture, and we think he ought to have known that his red and orange glasses were to keep out the blue or actinic rays of the solar spectrum. And from the old telegraphist we expected a different answer to the one mentioned above. Very little study would have enabled him to distinguish a Daniel from a Leclanché; and he need not have devoted much time to the study of chemistry to learn that his "blue stone" was a salt called sulphate of copper; and a little attention to a cheap elementary work on electricity would have enabled him to describe the chemical action of the battery he was using. It is far from our desire to jest about the scientific shortcomings of English telegraph clerks, our object is to urge them to read our popular scientific columns, and, in a short time they will take a deeper interest in their work, and make themselves of greater value to the Department.

THE HEALTH EXHIBITION.—We intended writing a detailed description of the Health Exhibition, but, since we have been anticipated by a "London Telegraphist," we prefer to publish his account of "the show," and the impression it made on one of the readers of this journal. We ought, however, to add that the International Health Exhibition is a grand success. After paying the modest demand of one shilling at the doors, the visitor is free to roam wherever he pleases. There are at present three military bands—the Grenadier Guards, Coldstream Guards, and Magdebourg Cuirassiers—playing the best of music from 3 p.m. to 10 p.m. In the Albert Hall there are two organ recitals daily, and the grounds are simply enchanting. The various sections of the Exhibition, gardens, &c., are illuminated by the electric light, thus giving many persons a chance of seeing at work the wonderful dynamos they have read so much about, but never before seen. On the occasion of our visit we noticed the machines named respectively the Brush, Siemens, Gramme, Edison, and Ferranti. Some parts of the building are lighted by glow-lamps, others by the arc light. The Jablockhoff candles and La Lampe Soleil (the Sun Lamp) attract a good deal of attention. At night the gardens are so brilliantly illuminated by electric lights, Chinese lanterns, and many-colored lamps that one is reminded of fairyland or a scene from the Arabian Nights. There is one great blot on the Exhibition we must not overlook, and that is the Refreshment Department. A decent dinner can be had for 3s. 6d., but between that and coarse fare served in the roughest fashion after a long trial of one's patience there is nothing. At one bar 6d. is demanded for an ice, and that vampire, the modern waiter, hovers about seeking prey. At another bar, where the vampire permits the visitor to "refresh" in peace, the same quantity and quality of ice is sold for 3d. Messrs. Bertram & Roberts have made an attempt to imitate the "Bouillon Duval" Restaurants of Paris, but we failed to find any dishes so tempting as many we have enjoyed at Duval's establishments in the French capital, and the charges in shillings are higher

than we used to pay in francs. The lager beer, so light and refreshing at this season, is only to be obtained at one small bar in the Belgian Court. The consequence is that the Germans, in search of their favourite beverage, block up this corner, and leave very little room for the Britisher. Surely there ought to be a dining-room where persons who cannot well afford 3s. 6d. and a heavy tip to the male vampire, could obtain a decent dinner for about 2s., inclusive of attendance. There is a shilling dining-room under the charge of the National School of Cookery, but the fare provided does not prove much for the students of the school. The vegetarian-room is prettily decorated and well ventilated, but there is very little to tempt either herbivorous or carnivorous visitors. We strongly advise our readers to dine before entering the Exhibition, and not to depend upon enjoying a meal served at the so-called "cheap restaurants" inside the building.

THE SOCIETY OF TELEGRAPH ENGINEERS AND ELECTRICIANS.—Professor W. Grylls Adams, the president, has invited the members to a conversazione, to be held in the Museum, Physical Laboratory, and Art Galleries of King's College, London, on Thursday evening, July 3, from 9 to 12 o'clock. On the following day, Friday, the 4th, a conference of the Society will be held at 11 a.m., in the Conference Room of the Health Exhibition, when a paper will be read and discussed "On Electric Lighting in Relation to Health," by Mr. R. E. Crompton, M.S.T.E. At 2.30 p.m., a paper will be read and discussed "On the Physiological Bearing of Electricity on Health," by Dr. Stone. Non-members can, by paying the usual admission fee at the doors of the Exhibition, attend the Conference without any extra charge. We shall be pleased to see a good muster of electrical engineers and telegraphists on that occasion.

MR. W. H. PREECE AND THE EXHIBITION OF 1885.—We understand that his Royal Highness the Prince of Wales has nominated Mr. W. H. Preece, F.R.S., the eminent electrician of the Postal Telegraphs, as one of the Executive Council of the International Exhibition of New Inventions produced since 1862, and of Musical Instruments. All who know Mr. Preece will acknowledge that the Prince has acted wisely in nominating a gentleman who has done so much towards the advancement of electrical science.

THE PRIZE SKETCHES.—The Guinea Prize has been awarded to the author of "Dan Dasher's Dilemma," Mr. J. W. Robinson, Postal Telegraphs, York, by a majority of thirty-two votes.

THE PRACTICAL TELEGRAPHIST.—ERRATA.—Page 20, for "Horse, six shillings," read, "Horse, five shillings"; page 64, for Liverpool "week-day attendance, 7 to 10," read, "open always"; page 97, for " $\text{Zn} + \text{OH}_2 + \text{C}$," read, " $\text{Zn} + \text{OH}_2 + \text{Cu}$ "; page 99, for "the sulphate of copper will dissolve in water," read, "the sulphate of zinc," &c.

Literary Notes.

SPRAGUE'S "ELECTRICITY." 2nd Edition. (London: E. & F. N. Spon).—The many students of electrical science who have so long waited for a reprint of Mr. Sprague's remarkable book will be glad to learn that a second edition of "Electricity: its Theory, Sources, and Applications," is now ready. We are constantly receiving scientific text-books for review, but very few of those useful works contain any real authorship. It is the rule even for eminent men to borrow from their predecessors, adding just the exact amount they have discovered themselves, while many do little more than employ the scissors and paste. The most useful compiler is the man who clothes in popular language the abstruse stuff of the mathematical writers, making it palatable to the majority. Mr. Sprague rises above all these "bookmakers"; he is an author in the true sense of the word; and, more, he is an author who has dared to think for himself. When the first edition of "Sprague's Electricity" was published, electricians were horrified to find a man who presumed to question the authority of the leading scientists of the day. The molecular hypothesis propounded by one author was pooh-poohed by many who clung to the fluid theories with a pertinacity worthy of the Stahlians. But as phlogiston had to make way for oxygen, so will the fluid-theories serve as jests for the electrician of the future. They were useful in the infancy of the science, and served as terms of convenience; but we are not satisfied with the idea of an "imponderable fluid." He must be a scientific bigot who denies that heat is a mode of motion, and Mr. Sprague must feel a sort of fiendish gratification in learning that his assailants of a few years back are now teaching the very theories they railed against with such vehemence. A few days ago one of our foremost telegraph engineers said to us, "I have heard many say they knew very little about electricity

until they read Sprague's book." We can endorse that statement. To quote the author's own words, "There are two electricities known to the scientific world—the electricity which exists in Nature, and the electricity which, created by mathematicians, exists chiefly upon the black boards of the professor's class-room." Truer words were never written. We have had considerable experience in teaching, and the result is that the majority of youths who are set to study an ordinary text-book of electricity seldom work *con amore*, unless the teacher translates each lesson into intelligible or popular language. This entails a good deal of labour, and it is no matter for surprise that instructors are always anxious to meet with books which students can really master, with a minimum amount of assistance from the teacher. Mr. Sprague's work is a marvel of lucidity and exactness. It is a book which the self-taught student will hail with delight, and it is a treatise that the oldest electrician cannot read without benefit. The chapters on "Electro-statics," "Electro-motive Force," and "Resistance," seem like a revelation to the student who has had no better fare than text-book or "black-board" electricity, while the original woodcuts to be found in Mr. Sprague's book are quite refreshing, after the old familiar diagrams which have done such good service since they left the hands of the original draughtsman. Let us hope that Mr. Sprague will live until the molecular theory of electricity is accepted by every man who calls himself a student or a professor of the science. His book is now acknowledged as a valuable addition to electrical literature; and we can only add that no electrician, telegraph engineer, or student ought to be without a copy.

KEMPE'S HANDBOOK OF ELECTRICAL TESTING.—The new edition of Mr. Kempe's "Handbook of Electrical Testing," now before us, is a very complete work. The clever mathematician of the Postal Telegraphs is acknowledged to be the authority on electrical testing, and we cannot praise too highly his admirable treatise. While appreciating Mr. Kempe's work at its true value, we should be wanting in our duty if we did not point out that the "Handbook of Electrical Testing" is not intended for amateurs or persons who have no knowledge of elementary mathematics. It would be next to impossible to produce a perfect popular treatise on electrical testing, therefore embryo telegraph engineers must devote a little time to the study of algebra and the higher branches of arithmetic before they can expect to understand Mr. Kempe's book. By the practical telegraph engineer the work will be found invaluable.

MUNRO & JAMIESON'S POCKET-BOOK OF ELECTRICAL TABLES AND RULES (Charles Griffin & Co.).—This is a work of the greatest value to all persons interested in the science of electricity and to telegraph engineers in particular. It is a veritable pocket-book; and, although it contains nearly 500 pages of closely-printed matter, it can be carried about in one's pocket without the least inconvenience. The general contents of this work are of so exhaustive a nature that it would take up a column of our space to enumerate all the subjects. Units of measurement, measures, testing conductors, dielectrics, submarine cables, telegraphy, electro-chemistry and metallurgy, batteries, dynamos and motors, and electric lighting are dealt with exhaustively. To use a conventional expression, Munro and Jamieson's pocket-book supplies a long felt want, and our advice to our scientific readers is, send to the publishers for a copy before the edition is sold out.

PREECE & SIVEWRIGHT'S MANUAL OF TELEGRAPHY (Longmans, Green, & Co.).—The third edition of this popular book is now ready. The work has been thoroughly revised, and Mr. Preece has added chapters on the telephone, fast speed repeaters, and that fascinating subject quadruplex telegraphy.

THE VESTIGES OF CREATION.—Twelfth Edition. (W. & R. Chambers).—It is with a sense of gratification that we learn for the first time the name of the author of that remarkable book, which caused so much controversy 40 years ago. Literary and scientific men ought to be grateful to Mr. Ireland for giving up his secret. So, after all, Robert Chambers was the author of "The Vestiges"! The Junius-like mystery is all cleared up; but it is to be regretted that the illustrious Darwin is not alive to learn the real facts of the authorship of a work which undoubtedly foreshadowed "The Origin of Species"; for Darwin, in his great work referring to "The Vestiges of Creation," said, "In my opinion it has done excellent service in this country in calling attention to the subject, in removing prejudices, and in thus preparing the ground for the reception of analogous views." The new edition is well got up, and published at 5s.

KOLBE'S INORGANIC CHEMISTRY.—Translated and Edited by T. S. Humphrey, Ph.D., B.Sc. (Longmans, Green, & Co.).—This is the latest addition to Messrs. Longmans' excellent series of technical manuals. It is a work easily understood by the student, and there is nothing in the shape of formulae that is not clearly defined. The type, paper, and general get-up of the book reflect the highest credit on the publishers, and we can safely recommend "Kolbe's Inorganic Chemistry" to our readers.

The Poetical Telegraphist.

THE SIGNALMAN'S STORY.

'Twas midnight, and the scene,
A signal-box, between
Two stations on a lonely country line;
I sat within, alone,
And heard without the moan
Of winds amidst the neighb'ring woods of pine.

No moon was in the skies,
And all their myriad eyes,
As if they feared to look upon the storm,
Were closed, when lo! the air
Was chilled about my chair,
And I a presence felt devoid of form!

Then all the lamps went out,
Save one that whisked about,
And seemed to be concerned ancient the door,—
When finally it stopped,
A single-needle dropped
Beneath it disconnected on the floor.

And oscillation brisk
Commenced upon the disc,
Whereat I feared some evil did impend,
And rose to quit the box;
But found the double locks
Were fastened,—and the needle said "attend."

Commanded thus, I gazed,
With fascination dazed,
Upon the speaking instrument, and read—
"Nay, friend, be not afraid,
'Tis years since I was laid
Beneath the earth, amongst the mighty dead.

"A signalman of old,
My joys were manifold;
But, ah! there came a day when they were o'er.
To me the news was sent—
This very instrument
Recorded that my loved one was no more.

"Of life I wearied then;
The haunts and homes of men,
Without her smile, for me had no delight;
The sunshine of my day
From earth had passed away,
To break no more for me the clouds of night.

"Ah, God! my love was great,
And ah! how desolate
My frigid heart was left to mourn the dead,
Till all consuming grief
Worked out its own relief,
And Reason from her ruined empire fled.

"'Twas here my blighted brain
Gave way beneath the strain;—
With what a wild delight I wrecked the place.
That lofty window-sash
Tore down with mighty crash,
Then, with a scream, leapt outward into space.

"And murder it was shown—
'By one or more unknown'—
Had cut me off from earth before my time;
So let my tale be told,
That henceforth none may hold
A guiltless person guilty of my crime."

F. E. S.

WHO INVENTED THE ELECTRIC TELEGRAPH?—As this question has frequently given rise to considerable argument, the following award of Professor Daniell and Mr. Brunel, who were appointed arbitrators to decide upon the question, will be read with interest. It may be well to add that in this award, Sir William Fothergill Cooke, and Professor Wheatstone, and the scientific world generally, fully concurred. It says:—"Mr. Cooke is entitled to stand alone as the gentleman to whom this country is indebted for having practically introduced, and carried out, the electric telegraph as a useful undertaking, promising to be a work of national importance; and Professor Wheatstone is acknowledged as the scientific man whose profound and successful researches had already prepared the public to receive it as a project capable of practical application."

Electrical Tit-Bits.

TELEGRAPHY BETWEEN AUSTRALIA AND LONDON.—A message of sixty-nine words was forwarded by the Governor of Victoria announcing the opening of the Melbourne Exhibition on that day. The message was despatched from Melbourne at 1 p.m., and reached London at 3.43 a.m. on the same day, or 9 hours 17 minutes before the hour of its despatch. Allowing, however, for the difference of time between the two cities, it occupied only twenty-three minutes in transit. The route of the message was over the lines of the Victorian and South Australian Colonies, the cables of the Eastern Extension Australasia and China Telegraph Company, the lines of the Indian Government, the cables of the Eastern Telegraph Company, and the lines of the Egyptian and French Governments, and the rapidity of its transmission shows the harmony with which the various administrations work together. The total distance traversed was 13,398 miles.

HEATHEN CHINESE TELEGRAPH.—Owing to the peculiarity of the Chinese characters, each of which represents a word, not a letter, as in our Western tongues, the Danish Telegraph Company (the Great Northern) working the new Chinese lines have adopted the following device:—There are from 5,000 to 6,000 characters or words in the ordinary Chinese language, and the company have provided a wooden block or type for each of these. On one end of this block the character is cut or stamped out, and on the other end is a number representing the character. The clerk receives a message in numbers, and takes the block of each number transmitted and stamps with the opposite end the proper Chinese character on the message form. Thus a Chinese message sent in figures is translated into Chinese characters again and forwarded to its destination. The sending clerk, of course, requires to know the numerical equivalent of the characters and have them found for him.

THERESA TIMMENS T.S.—Talented Theresa Timmens, to tell the truth, took the TELEGRAPHIST, thinking to tackle the technicalities therein taught. Theresa thought them trifles (there's thousands thoughtlessly think this too till they try); therefore, taking time, took to the task tardily, tacitly thinking to triumph. Though these troublesome telegraphic theories try the temper terribly, Theresa toiled, tenaciously traversing the tedious track, trying till thoroughly tired to translate the technical terms that therein transpire, though they tantalisingly thwarted Theresa throughout. Therefore, touchily tossing the TELEGRAPHIST to the table, Theresa took therefrom the text-book, "Telegraphy," then tremulously tried the theories therein treated, though tolerably terse, tested Theresa's tact tremendously. Tests, tangents, tensions, translators, terminals, transmitters, tumbled together tumultuously, tended to torture Theresa's throbbing temples till tell-tale tears, thrusting themselves through, trickled towards Theresa's tender throat. Tiresome things, thought Theresa, tormented to think they'd triumphed thus; then, testily tearing the TELEGRAPHIST to tatters, Theresa trampled thereon. Thus this tender thing's travels towards technical telegraphic training terminated!—F. E. B.

The Central Telegraph Office, London.

A SCRATCH team, with Mr. H. T. Wright as their captain, played a match against the Electric Cricket Club at Regent's Park a fortnight ago, at which the "glorious uncertainty" of cricket was thoroughly exemplified. The scratch team won. Messrs. Rollo and Wright played well for the office team, and Mr. E. Glass hit hard for the Electric. Spofforth's—we mean Miell's—bowling was hardly so destructive as usual. We hear the return match will not now be played.

BEFORE we entered our new dining-rooms, we heard wild rumours of the resplendent nature of the entertainment we should receive. Of course, it is only one more hollow delusion added to years and years of dining-room horrors. Joints frequently come to you half cold, beer goes off in as mysterious a manner as dynamite, and it is often served to you in a warm glass. The only thing consistent about the dining club up till now is its beautiful regularity in supplying you with "jam roll" as pastry. Perhaps the club will be generous enough to take the hint, and give us something else before the year closes. In fact, there are still grievances too numerous to mention—grievances which have existed for years and years, and we suppose always will exist.

LOOKING at our new dining and cloak-rooms, structurally or otherwise, we fail to see any improvement. The cloak-room is certainly not so convenient, and, as to the staircase, no human imagination can depict how long the edifice will stand. It might go to-morrow. It might bear the brunt three months. When the department constructed this beautiful narrow wooden staircase they seem to have

been blind to the fact that three-quarters of the staff gallop up and down, they never walk. We learn that the new floor has cost £120,000. We cannot vouch for this being the truth. However, it strikes us as being a pretty good sum. We should like very much for a return of the expenses incurred at our office during the last few years for knocking walls down, &c., we think it would be slightly astonishing. Moving instruments from one part of the building to the other has been going on in the most lavish manner of late years. But with what object until this new floor was opened we fail to see.

AMICUS HARMONIC SOCIETY.—The last meeting of the above Society took place on Saturday, June 14, when an excellent dinner was provided by the proprietor of the King's Head, Cannon-alley, E.C. The proceedings were of a very gloomy character, owing to the death of the treasurer, Mr. E. H. Jones, in the morning. It being impossible to forego the meeting, the sad circumstance not being known till some time past two o'clock. His (Mr. Jones's) death was referred to in very feeling terms by the Chairman (Mr. Alfred Baker), and the Hon. Secretary (Mr. Leete Henley). The following is the programme:—Toast, "The Queen," the Chairman; song, "Balaclava," Mr. Pardy; toast, "Progress of the Society," Leete Henley; song, "Good Young Man," the Chairman; song, "Nelson," Mr. T. Sadler; song, "G. O. M.," Mr. Simpson; song, "Sing on," encore song, "Match Girl," Mr. W. Ledger (Court Minstrels); song, "The Bellringer," Mr. Leete Henley; song, "Roast Pork," Mr. Dyson; song, "Under the Parlour-stairs," Mr. J. Dorbin; "Auld Lang Syne," "God Save the Queen." Meeting dispersed at 11.45 p.m. No casualties.

MARRIAGE.—On the 14th inst., at St. Matthew's, Canonbury, William J. H., eldest son of W. Joyes, of Midhurst, Sussex, to Lilian, youngest daughter of T. W. Newton, of Canonbury, and the Museum, Jermyn-street." We cut the above from the *Islington Gazette*. Miss Newton will be remembered by most of our readers as belonging to the Metropolitan Gallery. Mr. Joyes is deservedly popular at "T.S.," and there was a goodly assemblage of friends at the church, rice and good-wishes being lavishly bestowed upon both bride and bridegroom. Hastings is, I hear, the selected spot where that intoxicating bliss known as the honeymoon is being spent.

HOLIDAYS.—It has often occurred to me that a "Holiday Exchange System" might find some favour amongst the staff throughout the kingdom, and with the Editor's kind permission, and through utilising the friendly offices of his journal, might easily be brought about, and prove of general advantage to the staff. With his sanction, therefore, I will state roughly the *modus operandi* proposed. Mr. Hugh Williams, say of Llanllyddewymdd, North Wales, or any other of the beautiful wild Welsh towns and villages, has a fortnight's holiday, which he would gladly spend in London, under the friendly roof of a fellow clerk, in exchange for which he would open his door to the said clerk whenever he might wish to visit Wales. If the Editor would allow his columns to become the medium for those wishing to adopt this method, it would prove a great boon. Telegraphists in pretty sea-side and country places, when they take a holiday, prefer London to any place, but are frequently deterred from the fact of knowing no one in the modern Babylon. While there are hundreds of pretty, picturesque, health-giving places apparently unknown to the London Grinder, the alpha and omega of whose existence seems London, Dover, Yarmouth, and Brighton. I am sure the Editor would allow his paper to be the medium of the introductory proposals which might be under the heading of "Holiday Exchanges," worded thus:—"A. B. C., Scarborough, would be glad to correspond with T. S. clerk, with view of mutual exchange. A. B. C.'s leave begins July 12, &c." I can safely leave the suggestion in the hands of our editor. The same system might easily be in vogue from the Saturday to Monday. Personally, I should be glad to hear of some pretty rural retreat—say 100 miles from London, a sort of world-forgetting-by-the-world-forgotten place, where newspapers, wheatstones, news wires, Irish obstruction, Gladstonian verbosity, dynamite outrages, Egyptian difficulties, turf favourites, stock prices, dining-club iniquities, small-pox scares, milk adulterations, railway accidents, blue paper and red tape, ponderous officialism, dirty, underfed, half-clothed, rabbit-hutched children, drunken men, squalid women, tailors bills, unsympathetic tax-collectors, haughty water-rate fiends, energetic School Board Inspectors, sword-of-Damocles gas functionaries, plutonian cats, masher kings, noxious vapours, and last, but not least, a-mile-a-minute-for-life-or-death-rattling-sounders are unknown. In short, a place most unlike tearing, flaring, toiling-and-moiling London; a place the acme of peace and picturesqueness, wherein the above-mentioned horrors have not swept away the marks of God's most beautiful gifts to his creatures—nature. To such a spot I should like to go, and would be grateful to hear of, and any one sending a description thereof and a few stamps towards the fare shall be suitably

rewarded in thanks, together with a splendidly-executed oleograph in two colours (sage-green and terra-cotta) of your worn-out correspondent.

Provincial Items.

BIRMINGHAM.

TECHNICAL TELEPHONY.—Those members of the staff who attended the classes in connection with the City and Guilds of London Institute were recently treated to a capital lecture on "Telephony." Mr. Brown, engineer of the National Telephone Company at Walsall, was the speaker, the chair being taken by the Postmaster. The room was fitted with an arrangement of simple telephones joined up in circuit, so that the audience could easily satisfy themselves of the different experiments performed by the lecturer. A compound telephone was also fixed in the room, kindly erected for the occasion by the company, and connected by wire with the Central Telephone Exchange. After dealing with the circumstances which led to the invention of the instrument, Mr. Brown described minutely some of the different forms of the telephone and their action, and brought the lecture to a close by having all the instruments in the room switched through to Walsall, the person in charge there favouring the gratified listeners with a song, &c. The meeting closed with a hearty vote of thanks to the principles. About thirty clerks from this office presented themselves at the examination of the City and Guilds held Wednesday, May 28th.

DISTRIBUTION OF PRIZES TO MESSENGERS.—On Saturday afternoon, May 24 (the Queen's birthday), the annual distribution of prizes and certificates to the messengers for general good conduct, prompt delivery of telegrams, essays on various subjects, drawing, &c., took place in the Committee-room of the Town Hall. The Mayor (Alderman Cook) presided, and there were also present Colonel Smythe, Dr. Jones, Messrs. S. Walliker (postmaster), S. Greenway, J. W. Lea, T. Naden, Storey, Lewis, Heritage (a son of whom designed and multigraphed the very appropriate vignette invitation circular), Dorrington, Baker, Johnson, G. King Patten, Mrs. and Miss Walliker, &c. Mr. Walliker explained the objects of the institution, in promotion of which he had laboured hard to improve the minds of the young lads under his supervision. His object was to induce boys to do their duty in the most thorough manner possible, and to educate them in various branches of study. They were instructed in botany, drawing, arithmetic, and other useful subjects. In promotion of botany, they had made visits to the special gardens of the town, and had a ramble over Cannock Chase under the guidance of an able botanist. In connection with this part of his address, the Postmaster exhibited in an alabaster cup, three inches in diameter, a horse-chestnut tree, two oaks, two ferns, a rush, a sun-dew, and different grasses in healthy growth, the whole forming a most novel, pleasing, and interesting study. The Mayor said that great credit was due to the postmaster for having organised and carried out an institution such as that, and he felt sure, as it became known more generally among the merchants and manufacturers of the town, they would render it all the support it deserved. It ought to be encouraged, and he should personally be pleased to subscribe to its funds in the future. It was a happy idea to turn the custom of giving Christmas boxes into a means of social and intellectual improvement. Here kindness and liberality were united in the endeavour to properly utilise a sum of money which had hitherto proved of little lasting benefit, and in some cases had been a source of great moral temptation to the boys. In conclusion, his Worship presented prizes and certificates to the lads for official work, Messrs. Greenway and Lea those in connection with essays and wild flowers and drawing.

CHESTERFIELD.

ONLY a few weeks ago the death of the Postmaster of Chesterfield had to be recorded, and before his successor has been appointed, Mr. Whomersley, who has had temporary charge of the office, has been called over to the majority, his complaint being consumption. One of the most numerous and influentially signed requisitions ever prepared in Chesterfield was that which was presented to the Postmaster-General, asking him to appoint Mr. Whomersley in place of Mr. Smithson. It is said to be doubtful whether the request would have been complied with. At any rate, it is now tolerably certain that the appointment will be conferred on a stranger. Mr. Whomersley was formerly an active member of the Chesterfield Cricket and Football Clubs, and had a large number of friends and acquaintances by whom he was held in high esteem. It is impossible to repress a feeling of regret that his career has been so prematurely brought to a termination. The

duties of Postmaster have been performed by him for several years through the illness of the late Mr. Smithson. The funeral took place on Wednesday, June 4, at Stonegravel's Churchyard, by the side of the late Postmaster, nearly all the clerks attending. The grave was covered with beautiful wreaths. Another death also occurred from the same disease within a week. The deceased was a rural messenger. Many of the staff attended his funeral.

MUCH uneasiness and considerable alarm is being felt through so many of the staff being unwell, three having died within two months.

OUT of a staff of three we take six TELEGRAPHISTS, and we are greatly pleased with "The Practical Telegraphist."

EDINBURGH.

A MEMBER of our staff, Miss J. Cornwall, has recently left us for America. Previous to her departure, her friends in Edinburgh presented her with a mark of their esteem and regard in the shape of a handsome gold albert and pendant bearing a suitable inscription.

WE regret to have to record the death of Mr. Peter Hunter, a much respected member of the staff. At the funeral, which took place on June 2, there was a goodly muster of representatives from the office, including several superintendents—an evidence of the esteem in which our late fellow-worker was held by all with whom he came in contact.

GLASGOW.

SHOOTING.—There is every indication of a close contest for premiership of Challenge Cup. The proceedings have reached the third stage, and tall scoring has been indulged in by a few of the members. The scoring, up to the present, shows an improvement in comparison with former years, and as one or two of the "crack shots" are close on each other, a keen finish is expected. The following members top the poll:—Messrs. M. Cameron, A. Kettles, Tom MacColl (present holder of cup), and A. Harper.

LIMERICK.

OFFICIAL notification that this office has been made first-class was received here on Tuesday, June 10. The following are the promotions to the first-class:—Telegraph Office: Messrs. P. J. Ryan, E. A. Wickham, T. J. Colbert, and J. L. O'Hanlon; Post-office: Mr. J. Conway, Provincial C. C., who has been transferred from the telegraph branch, Mr. H. J. Neville, Provincial C. C., and Mr. J. Coughlan. Messrs. H. B. Royse and T. J. O'Sullivan, of the telegraph branch, are on probation as candidates for similar promotion in the post-office section.

LIVERPOOL.

HEAD OFFICE.—On Wednesday, the 3rd of June, the Liverpool telegraphists gave a second concert in the Rodney Hall, Rodney-street, when a varied and well-selected programme was most creditably rendered by the members of our staff and one or two friends, the following ladies and gentlemen kindly volunteering their services:—Miss Lyndall, Miss Hutchinson, Miss Boig, Miss Hood, Miss A. A. Smith, Miss Williams, Miss Edwards, Miss Willan, Miss Houghton, and Miss Eyre; Messrs. Sumners, Crighton, Connell, S. E. Steele, Taylor, J. Evans, sen., and J. Evans, jun. The music, vocal and instrumental, was an improvement upon the last season, as the performers appeared to have gained confidence and experience, and were favoured by having a much better hall. We were sorry, however, to miss the services of some of those who graced the first concert, notably Mr. Pincombe, with his violin, though his place was ably filled by Miss Eyre. After the concert a most enjoyable dance took place, to which a large company remained, and the gathering did not break up until the small hours. The result has been a substantial balance on the right side of the ledger, and the cricket club has received a handsome addition to its funds.

ON Saturday, the 14th inst., the Liverpool Telegraphists' Cricket Club played a match with their MR. confrères on the ground of the latter at Manchester, and secured a victory by twenty runs. They were afterwards most hospitably entertained by their opponents, and returned to Liverpool most eloquent in their praises. One of the Liverpool team, Mr. Chappell, met with an accident, being somewhat severely bitten on the hand by a large dog; but he is progressing favourably, and will, no doubt, be shortly fit for duty again. The Liverpool staff will be happy to welcome a Manchester team to this end of the canal, and hope a return match can be arranged for an early date.

MANCHESTER.

ON the 14th inst. a cricket-match was played between the Liverpool and Manchester staffs at Belle Vue Gardens, Manchester, and resulted in a win for the LV staff by twenty runs. The weather was most propitious, and the surroundings very interesting. In

one part of the large enclosure the 7th L.A.V. were being inspected, and round about the field of play the scene was enlivened by the pretty costumes of a number of young lady telegraphists from the Manchester office, whose society was evidently highly appreciated by the visitors as well as by the MR gentlemen. After the match, about sixty sat down to a substantial tea which all apparently enjoyed, when the usual kindly greetings, &c., having been given, the party was broken up; the majority, however, stayed to witness Messrs. Jennison's grand display of fireworks illustrating "The Fall of Constantinople." The return match will be played at Liverpool in August.

MIDDLESBROUGH.

THE M. I. postal and telegraph staff have formed a cricket club. A committee is selected, and Mr. Chas. Acon appointed captain.

THE lady clerks are also to the fore of out-door amusements, possessing as they do a capital set of croquet materials. This is a capital game, and their playing in the Park is much enjoyed of a morning by numerous visitors.

PORTSMOUTH.

A FAIR number of copies of the "Practical Telegraphist" have been taken here. The technical portion of the book appears to fill a vacant place in the library of electrical knowledge, and will unquestionably prove a useful stepping-stone to "Preece and Sivewright's" and other more advanced publications.

WE have been full of business during the last few weeks, there having been more ships here than at any period since the Crimean War. No fewer than twenty-three post-captains were in the port at one time. The ships comprised the Channel Squadron, Reserve Squadron, and the whole of the Indian troopers, besides various other craft.

A SOMEWHAT spasmodic effort has been made to start a cricket team here, but the exigencies of the service preclude the possibility of practice except before 7 a.m., and I fear that the would-be "Graces" have been unable to "rise" to the occasion. It certainly is not true that a match has been arranged with the Australians; so that if there should be a rumour to that effect it may with certainty be contradicted!

Cable Companies.

CRICKET.—The return match between the Anglo-American and D.U.S. Cable Cricket Clubs was played at Ballinskelligs on Monday, June 2, resulting in another victory for the Direct men by five wickets. Score:—

Anglo-American C.C.

First Innings.		Second Innings.	
Carmichael, L., lbw b Watt	2	b Watt	0
Jolley, T., c Armstrong b Watt	4	c Fahy b Watt	5
Tranfield, F., c Hardy b O'Leary	2	lbw b Watt	3
Smith, A. F., b O'Leary	6	b O'Leary	10
Jones, W., b Watt	0	c and b Watt	0
Johnson, E. (capt.), b O'Leary	7	b Watt	1
Davies, G., c Armstrong b Watt	0	not out	1
Oates, A., b Watt	3	b O'Leary	1
Smythe, J. T., b O'Leary	0	b O'Leary	1
Hutchinson, M., c Harms b O'Leary	1	c and b O'Leary	0
Graves, J., not out	0	b Watt	13
Extras	5		5
	30		40

Direct U.S. Cable C.C.

First Innings.		Second Innings.	
O'Leary, T., b Smith	7	not out	1
Harty, J., b Smith	4	b Jones	0
Lupton, W., c Hutchinson b Smith	0		
Smith W., b Smith	12		
Main, D., b Jones	9	not out	2
Fahy, Rev., c Tranfield b Jones	7	b Johnson	0
Armstrong, J. G. (capt.), b Jones	0		
Watt, J., not out	13	c Jones b Johnson	3
Cuthbert, D., hit wicket	4	c Carmichael b Jones	1
Harms, J., b Jones	0		
Watson, G. L., run out	0	b Jones	0
Extras	5		4
	61		11

COMMERCIAL CABLE COMPANY.—The steamer *Faraday*, having laid the Rockport (Mass.), Dover Bay (N.S.) section and 800 of the main cable from Dover Bay eastward, has returned to London for the remainder. It is expected that the *Faraday* will start from

Ballinskelligs Bay early in July, and that the cable will be completed by the middle of the month.

CARCAVELLOS (Lisbon).—Some of your readers, especially the "Easterns," may be interested in the doings at their old station "Car." On May 23 Messrs. Stacey (Tom Diddles, a gardener), Morris (Harry Collier, a railway fireman), Bean (Charley, a carpenter), Lovell (young Mr. Simpson), and Masters (Nan, the good-for-nothing), enlivened our theatre by performing Buckstone's comic drama, "Good for Nothing," to an appreciative audience. "Nan" looked and acted her part to perfection, despite being unable to get "the durned top" to spin. Stacey, with his "cool, calm, and collected manner," caused roars. A ball succeeded, which was kept going right merrily until dawn, and—mark, lady readers—there was not one "wallflower." The dancing staff came out strongly. Among the guests were General Valente and daughters; Colonel Machado, Governor of Fort St. Julian, wife and daughter; Mrs. Paulo Jorge; Captain Proença, and other officers; F. S. Harwood, Esq.; Mesdames Wilkinson, Cheesman, Picao, Baines, Mungavin, the Misses Durand, and Mr. Guerin. "Captain" Morris, not of the Salvation Army, is getting his eleven into order for an effort against the Lisbon Cricketers on June 12. Messrs. Cheesman and James have left for England on leave of absence. We hear the former expressed grave doubts as to his ability to make himself understood in England after speaking Portuguese for so long. The laying of the cable from Hong Kong to Macao will make a change in our staff, Mr. Antunes being under orders for the land of pigtailed. Your improved journal is much appreciated in this corner of the Peninsula.—"SPOT-DODGER."

THE BENNETT-MACKAY CABLE.—The Waterville and Mallow Railway Station section of the new wire in course of erection for the Commercial Cable Company, to connect the land office at Waterville with London and other large English towns, was completed this week under the immediate superintendence of District Inspector Collins. The new wire runs from Waterville (Ballinskelligs Bay) through Cahirciveen, where it joins on to the poles already supporting the lines of the Post Office Anglo-American and Direct United States Cable Companies on to Killarney, thence to Mallow Railway Station, Limerick Junction, Waterford, and across to Haverfordwest, through the Wexford cable. I understand several of the appointments in the new company have already been filled up by operatives from the A.A. and D.U.S. Companies, as well as from the Postal Telegraph Department, at very liberal terms.

Correspondence.

THE "T. S." DINING CLUB.

SIR,—Grave necessity compels me to inflict you with a doleful account of the T. S. telegraphists' dining club—an association made up of smouldering discontent, despondency, and horror.

I will spare your readers a minute description of the food supplied us in this office, as I fear that even the bare recital would have a serious effect on their digestion, though not to the extent of the ravages on ours. I am, therefore, giving only a mild idea of it when I say that the meat which is served us must, before being handed over to the tender mercies of our *chef*, have inherited all the evils which flesh is heir to. This, plus the execrable cooking, has been our fare *ad nauseam*.

It is time a protest should be raised against the downright insulting disregard on the part of the management for those feelings which, I am certain, exist and are respected even in the poorest homes. What person, I ask, can tolerate vegetables being pitched on one's plate by the greasy hand of a servant? and, then, perhaps, afterwards mauled about because the portion is too large?

Again, a roll-and-butter is served wrapped up in a piece of tissue paper. If the paper runs short, the roll is handed to the purchaser, whilst the butter is retailed on a cabbage-leaf, over which who knows how many slugs and caterpillars have wended their tortuous ways?

The table-cloths are generally black, the clerks being obliged to clean the knives and forks on them.

The club—or, more properly, the committee—has saved a considerable amount of money during the last half-year. Do we want it saved? Emphatically, no! Let the surplus be at once expended on supplying spoons that do not cut the mouth, and in good fires so that we shall no longer be obliged to put up with cold trash. Let us have wholesome meat, and not stuff that a starving cat would turn up its nose at. In short, let us be able to write at no distant date to say that matters have considerably improved.—I remain, sir, obediently yours,

JOHN MCGUISE.

BANK HOLIDAYS.—POSTAL v. TELEGRAPH.

SIR,—Do you know how pleasant it is to be able to chat on the wires all the afternoon of a Bank Holiday, or to have an hour in "the Land of Nod" over the back of a chair, perhaps dreaming you are spending your Bank Holiday in a most enjoyable way, as the postal staff most probably are? Now, Mr. Editor, I should like to bring forward a sore grievance. I am a lover of fair play, but I fail to recognise it, in allowing the postal staff to spend their Bank Holidays where and how they please, while we poor telegraphists sit here all the afternoon, as I have heretofore said, doing nothing. I think, and many more think the same, that the telegraph department ought to share the same fate as the postal; open as on Sundays, thereby giving us the opportunity of a day's outing. We are not paid extra for this; nor are we allowed a day off at some future time as the metropolitan clerks are. Now I call upon the country clerks, and ask the question, Is this fair? The answer, I hope to see through the columns of the TELEGRAPHIST, and trust they will make a stir and stand up for

FAIR PLAY.

June 2, 1884.

THE OLD AND NEW "TELEGRAPHIST."

DEAR SIR,—I have beside me a few numbers of the old *St. Martin's Magazine*, and subsequently the TELEGRAPHIST; and these afford a contrast with the present organ that is markedly in favour of the latter.

I felt somewhat pained that the result of your disinterested efforts had met with such meagre success. Our magazine is most admirably got up and conducted, especially when it is remembered that it has only had a six months' existence.

It is beautifully printed, its contents are varied and interesting, so as to suit all tastes, and its price is low enough to admit of the office boy purchasing it.

That episode about the man who speculated in one copy for himself and seven others is—well, we won't say anything more about it; such specimens of humanity are to be found in every sphere, and in any circumstances.

You must have gone through a prodigious amount of work in order to launch the concern. The hints you threw out in your last issue, as well as the strictures you so deservedly passed upon certain members of the fraternity, will surely operate satisfactorily for the future.

As a humble member of the service, I beg to tender you my most sincere thanks for the generous effort which has placed at our disposal an organ that is at once needed and of great value to the whole profession.—Yours very truly,

EDINA.

THE "SCHEME" IN THE PROVINCES.

SIR,—I have seen and heard a lot about the "Scheme," by which so many telegraphists received such dazzling increments in their salary, that I should really like a little genuine enlightenment on the subject. Speaking for our office, however, I may say the dissatisfaction remains as great and glaring as ever. Personally, I have received no benefit from it, and am not likely to without a few of my seniors elect to do me a turn by dying. And fifteen years' service for a salary of 30s. a week seems to me that, without mine is an isolated case (which, for the sake of my brethren, I sincerely hope it is), there is still legitimate and reasonable grounds for the prevalent feeling among us that provincial telegraphists are still underpaid, overworked, and in many cases overlooked. Is mine an isolated case? I should like to know this.

PROVINCIAL.

SIR,—"Molecular Vibration," so fascinated about the "Chat with Calcutta," will find a good deal of the information he requires in a paper read by me before the Society of Telegraph Engineers, and printed in their journal, Vol. VI., No. 19, 1877.

G. R.

Answers to Correspondents.

CABLE CLERK. We believe that the new Atlantic Cable just laid has a resistance of 6,000 ohms and a capacity of 800 microfarads.—J. A. C. In anticipation of the sixpenny tariff coming into operation this year, a large number of youths were taken on at the Government Telegraph School, so I am afraid you will have to wait a long time. If you wish for further information send a stamped envelope and we will reply direct.—EASTERN. The Morse Printer is the instrument used by the Indo-European Company. If you can work the Sounder you can manage the Printer.—MOLECULAR VIBRATION. See "G. R.'s" letter. We have not yet received the particulars from Mr. Andrews.

The Telegraphist

A MONTHLY JOURNAL OF

POPULAR ELECTRICAL SCIENCE.

Speed the soft intercourse from soul to soul,
And waft a sigh from Indus to the Pole.—*Poem.*

LONDON: FRIDAY, AUGUST 1, 1884.

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Prize Sketches.

No. VIII.—THE PROGRESS OF TELEGRAPHY SINCE THE TRANSFER.

"Old times are changed, old manners gone."—*Scott.*

"IT is less than thirty years since a small room in West Strand, and another in Wall-street (New York), represented the head-quarters of the Telegraph system of the Old World and the New." These lines, which I remember to have read a few years ago in a journal devoted to electrical science, impress me as conveying a more striking sense of the progress in question than any array of statistics would do. There is something picturesque, nay, romantic, in the statement, though it is merely an expression of fact. Only reflect on it, and then take a mental view of the present T.S., the telegraphic hub of the universe! What a vast difference in the proportions of everything—in the number, and in the character of the apparatus employed, and in the amount of staff. Truly astonishing indeed has been the growth of telegraphy. The girdle round the earth, of which Shakespeare wrote with or without prevision, is now *un fait accompli*, and the inner network is in constant progression. Who knows?—the day may come when a wire shall be fixed to the North Pole, to the consternation of the bears, seals, and walruses of that arctic region!

The history of telegraphy before the transfer bears somewhat the same relation to the period subsequent as the age of stage-coaches does to that of the steam-engine; in fact, there is, in some particulars, a greater disproportion in the former than in the latter case. Down to the time of the transfer the Wheatstone, duplex, and quadruplex systems were locked within the brains of their ingenious parents, the Wheatstone being the first to take its place in the telegraph room, and assume the rank it has since maintained as the prince of telegraphic inventions.

Dear me! what clumsy, uncouth apparatus were previously employed to describe the beautiful characters of the Morse alphabet! The Ink writer was the exclusive property of the United Kingdom Company, who had purchased the patent. The British and Irish Company, commonly called the Magnetic, used a code of their own, which was better adapted to their Bell system than the Morse. The proud Electric and International, the largest by far, the best organised, and, in most respects, the best equipped of the three companies, had to be content with heavy embossing instruments, which registered their signals in faint, punctuated characters, with a painful grinding effort, the keys also being of the pump-handle type. There were, of course, the double and single-needle systems, but it seems to have been understood from the first that these were suitable for small traffic only.

One of the best evidences of progress is the increase of staff which has taken place. I have no reliable statistics to guide me, but speaking roughly from a general knowledge, and taking into account the enormous number of new offices which have been opened, I should say that the staff now engaged in telegraphic duties outnumbers the staff of the three old companies combined by at least ten to one. The increase alone in many considerable offices is as five to one. Take the Central Office, for example, which feeds and is fed by every other; at the transfer the staff

numbered about five hundred, it now numbers over two thousand. Every considerable office, from John o' Groats to Land's End, could tell a similar tale. As for messages, whereas they could formerly be counted by hundreds of thousands, they are now numbered by millions, the increase by itself in some years being equal to the aggregate total of pretransfer annual returns. This increase was most marked during the first years which followed the transfer, when trade, with luxury in its train, was advancing by leaps and bounds, but has never absolutely ceased during the worst periods of commercial depression which we have unfortunately experienced. Telegraphy is essentially a luxury, seeing that our forefathers did very well without it, and, apart from business exigencies, the public indulge more freely in its use when money is plentiful than when it is scarce, for which reason the state of telegraphic business is a very good indication of the state of trade—a trade barometer, in fact. A considerable proportion of the messages sent are not apparently of an urgent nature, whose purpose might not equally well be served by the post; but it is so nice to be able to convey without effort and without ceremony, in a short telegram, what you might otherwise be obliged to express with the exercise of both in a laboured epistle. To lovers of indolence, indeed, with whom personal ease is a greater consideration than expense, telegraphy is a most gracious boon.

Probably the best feature of the postal telegraph system is that offices are evenly proportioned to the population, brought closely to it, and carried into sparsely populated districts. The country is now so netted with wires that it is impossible to go many miles anywhere without meeting with a telegraph-office. The genius who presides at the rural office may not always be a brilliant example of operatic skill; she (it is usually a lady) has probably acquired the art too late in life for that; but she is generally equal to the requirements of the place—the record of births, deaths, and marriages being comparatively light—and to the simplicity of the instrument. One of the results of this admirable change is the almost absolute extinction of the practice of delivering messages by man and horse and by train, so commonly resorted to in old times. The contractor, who was bound to provide a mounted messenger, at a moment's notice, for the delivery of telegrams, is now a tradition of the past.

I have said that the extension of the wires to unremunerative places is probably the best feature of the Postal Telegraph system; but I am humbly of opinion that, notwithstanding the *inevitable* progress which has been made, it represents the sole exceptional advantage (a very considerable one, I admit) which the public now derive from the transfer. All progress is relative, and I dare to think that the unrestricted competition of the three companies down to this time would have led to results besides which anything we can now show would make a poor comparison. Beyond question, a sixpenny tariff, which there is so much hesitation to introduce, would have been established long ago, without any pressure from outside, and there would doubtless have been other spontaneous reforms. The Government monopoly has suppressed private enterprise without supplying an adequate substitute—this is the view of the Times, which has lately admonished us that it offers fewer facilities to the public than are offered in any other civilised country of the world. Rather warm this on Englishmen, who are wont to pride themselves upon their superiority in the commercial arts! Of course, it is the system that is at fault, not the men.

I believe it is the opinion of most persons who are practically acquainted with the subject, that the defects of the monopoly have been intensified (perhaps entirely caused) by the policy of amalgamating the system with the Post-office, instead of constituting it—not in its locality, but in its government—a separate department, particularly as amalgamation is understood under Mr. Fawcett's new scheme. As we are not all Admirable Crichtons, or endowed with minds which fix with equal interest upon any and every kind of work, it stands to reason that, considering the mass and variety of postal business, the efforts to become that prodigy of official excellence, "an all-round man," must result in a depreciation of something. And it is the Telegraph Department which is most liable to suffer by this absence of concentrated interest, for the precise reason that as its emoluments are inferior to those of the sister branch, it is likely to receive the least attention.

It would be very unfair not to admit that the system of amalgamation has its advantages. It provides for the difficulty of adjusting labour, so as to avoid waste, inseparable from the fluctuating character of telegraphic business, supplies an excellent postal reserve, simplifies and facilitates accounts; and on these grounds may possibly be more economical than a separate administration would be. But by so subordinating all ranks of the Telegraph service as to deprive it of the power of initiation (a loss of freedom seriously detrimental, I believe, to reforms) by destroying its distinctive character as a profession, and by diverting ambition into such different channels, it is certainly not favourable to the progress

of telegraphy—*per se*, the point of view from which I am considering it. I distinguish between the public and the staff; because, as regards the latter, I believe the transfer was about the best thing that could have happened. It secured by its classification system (which is not nicely discriminative) a comfortable prospect to all, and by providing a choice of employment to suit various capacities opened a road to rewards for those whose genius is not emphatically electrical, which they never could have attained in a purely telegraphic sphere.

One of the curious evidences of progress is the changed feelings with which telegrams are regarded by the non-commercial classes of the community. The visits of the little boy in uniform with the brown envelope are now viewed with almost as much equanimity as those of the postman—that interesting messenger of larger growth into which he often develops. But when I was myself a messenger in the old Electric Company, I had frequent opportunities of remarking the change of countenance, the trepidation, with which my approach was observed. The telegraph boy was then looked upon as a bird of ill-omen, for common people did not telegraph except for some unusual purpose, calculated to inspire feelings of uneasiness, at the least.

With the general advancement have also disappeared those grotesque views of the telegraph which used to be entertained by the vulgar. It may safely be asserted that very few people nowadays believe that messages are “whizzed” bodily along the wires, or that a pair of boots may be despatched by the same agency, though the nature of the mysterious medium is still a puzzle to the uninitiated.

The progress of telegraphy since the transfer has a sentimental aspect for many of us. It has been the progress of our lives from youth to manhood, from manhood to the verge of middle age. The fifteen years which have rolled so quickly by have seen our characters matured and our prospects of success in life made or marred, while each year has diminished the number of that comparatively small band of operators who constituted the staff of the defunct companies. *Sic transit gloria mundi!* VETERAN.

NO IX.—THE FUTURE OF ELECTRIC LIGHTING.

By FRED. E. BUNT.

THERE are some persons who are not yet prepared to admit that the electric light has a future before it, this feeling being in many cases induced by personal interestedness in some rival illuminant; but where this is not the case such a peculiar notion may yet be excused, for what can be more natural after the collapse of so many of the numerous companies which a year or two ago sprung up, mushroom-like, with the avowed intention of revolutionising the gas-consuming world, and introducing anything and everything connected with electricity?

In the face of such dearly-bought experience, it is not to be wondered at that there should exist some doubt amongst those who, all too readily, bestowed their patronage and money, as to the genuineness of the prophecies concerning the “light of the future,” which were then so profusely uttered. Although, as a matter of fact, the failure of a large number of these companies was well known to be inevitable by those technically qualified to judge, for it was self-evident to them that the whole thing was being overdone, and the announcement of the wonders to be wrought by such agencies was, to say the least, premature. It can only be hoped now that the competition amongst those companies which, up to the present, have succeeded in holding their own in spite of the semi-mania which so startled the speculating investors of the world, will ultimately result in the “survival of the fittest.”

It is simply impossible to predict the future of electric lighting with anything approaching absolute certainty, as far as the extent of its development is concerned, but it does not require more than very ordinary observation, coupled, perhaps, with some slight knowledge of the subject, to recognise the fact that the whole science is, comparatively speaking, still in its initial stages. This being so, and bearing in mind the success which has, apart from sensational expectation, attended the preliminary phases of its introduction, it is not so difficult to imagine what is likely to be accomplished when the intricacies of its elaboration have been fully worked out and practically exemplified.

It must not be forgotten that it has made more progress in popularity in the period since its introduction than gas did in double the time; this fact seems to have been lost sight of by those who are wont to look for lightning speed in the development of anything pertaining to electricity. The chief points which will determine its future must of necessity be—its efficiency, its safety, and its cost.

Towards establishing its claim to the first, every day adds fresh testimony. It has now been, or is about to be, fitted to most of

her Majesty's ships, in one form or another, besides many large vessels of the mercantile marine of this and other nations; whilst, in another direction, and one about which there has been hitherto considerable doubt of its adaptability, *i.e.*, house-lighting, we have an interesting account of a commendable trial now being made at Colchester. The plan, which embraces in some respects a new idea, apparently overcomes many of the difficulties which have hitherto been thought to exist, and promises, as far as can be seen at present, to form the basis of more extended trials.

It consists of the establishment of one or more central generating stations at which the dynamos are fixed with all the necessary adjuncts for supplying the “power.” From these generating stations large “leads” radiate to the different distributing stations, situated at convenient spots and distances for their intended purpose; and here the “power” will be “stored” by means of secondary batteries until it is required for distribution over the various street and house circuits, which in their turn branch out in all directions from these centres. At these stations facilities exist for cutting in or out any of the “leads,” or switching off exhausted cells, and replacing them by others fully charged in a precisely similar manner, and with practically the same result as the present gas-mains are served from gasometers; these battery-stores will, in fact, be veritable electrometers. Again, the users (it would scarcely be correct to style them consumers!) will be able to disconnect or switch-off their indoor “leads” from the main conducting-wires at the front door, and so remove all chance of risk, even if it existed, from any imaginable source. Thus it will be supplied at so much per lamp, as gas is at present at per foot. It must be acknowledged that this is taking a somewhat sanguine view of the subject, in face of the very tangible difficulties which surround even the best-known forms of secondary batteries at present; but that means will be found for overcoming these obstacles, and that some such plan as this will form the future basis of its application there can be little doubt.

As regards its safety, of course we must estimate that also in comparison with gas, and allowing that equal care be taken in workmanship and equal precaution adopted in its fittings, it is incomparably safer than gas under similar conditions. With such a system as that just described, it would be next to impossible for an accident to occur. The dynamo circuits are quite distinct from the house supplying or distributing wires, and the whole of the house lamps being incandescent it will be unnecessary to supply an electro-motive force of anything like 200 volts, which is the safety limit insisted upon by the Board of Trade. Those establishments requiring the use of arc lights will be served by separate circuits, so that, without the fear of leakage, and consequent danger of explosion such as must ever be present with gas, there can be no question as to the preference in favour of the electric light. Now, as to cost. It has been found even up to now that it can compete with gas at 3s. 9d. per thousand, whilst the saving on board the Government troopships, apart from the increased comfort and cleanliness, has been estimated at fully cent. per cent.; but with the increased demand for it, the cost of installation and production must necessarily decrease, so that it is not too much to infer that the objections raised upon that score are as readily to be disposed of as upon any of the others, leaving the light a powerful competitor, although by no means a successor of gas.

In dealing only with these three points in favour of electric lighting, I have omitted one of the chief features which *must* eventually compel its introduction into all large manufactories or places of business where the use of artificial light is rendered obligatory.

Its healthfulness might very truly be regarded as its chief recommendation, and its speedy utilisation should be eagerly looked forward to by the thousands of workers throughout the country whose health is now being ruined by a vitiated atmosphere. The beneficial results which would speedily accrue to toiling humanity is beyond question, and would once more tend to prove that well-worn truism that “electricity is life!”

MR. G. M. CURTICE, of High-street, Belgrave-road, has modelled a very successful bust of the late Mr. Charles Reade, taken from a cast after death.—*Morning Post*.

AN ALPHABET OF OLD ELECTRICS.

Ansell	Graves	Moseley	Spagnoletti
Bright	Hatcher	Newman	Trenam
Culley	Izant	O'Shaughnessy	Unwin
Dodwell	Jackson	Preece	Varley
Evans	Kröhn	Quayle	Watlock
France	Lynd	Reid	Young

WE shall be glad to receive names to fill in Alphabets for the magnetic and U.K.

OCEAN TELEGRAPHY.

INTRODUCTORY.

OCEAN telegraphy is so essentially of British origin, being the result of British enterprise, British capital, patience, and perseverance, and having been brought to its present state of approximate perfection by British engineers, British electricians, and British operators, that I have no doubt that many, like me, who date their telegraphic experience from the old electric times, have noticed, with a feeling approaching to jealousy and virtuous indignation, that the last two numbers of the TELEGRAPHIST, a British journal, the world-wide organ of, and established exclusively for, the edification and amusement of the British telegraphist in all parts of the globe, have contained borrowed articles from an American source upon "Ocean Telegraphy," a department of electrical science into which our American cousins have but recently made their *début*.

I have pondered over this fact and have been led to exclaim "Surely, Mr. Editor, amongst all your acquaintances some Englishman can be found able and willing to write you a few papers, in a simple and popular style, for the amusement and enlightenment of the thousands of scattered telegraphists who read your paper every month—(it should be oftener, and would be if every one put his, or her, shoulder to the wheel and doubled its circulation)—without having to compel you to borrow from American pupils what Englishmen have taught them in the department of Ocean Telegraphy."

Ruminating thus, Mr. Editor, I fancied I heard you say, "What am I to do if no Englishman will come forward and send me 'copy'? I must beg or borrow something from some one upon such an important subject—one in which so many of my readers are interested at the present day." This fancied reply set me thinking still more, and at last I said to myself "Why don't you send him some copy?" At this pointed question I could not well evade thinking that, as it might be, or it might not be worth putting into type, that would not be my business, but that of the Editor—all I could do would be to scribble, and he must determine whether or not it would be worth printing, and then trust to the verdict of the jury composed of all his constituents.

But it may be asked, "What do you know about it? Why should you pretend to undertake such a task? Has not Montaigne said, 'I would have every one write what he knows, and as much as he knows, but no more,' and what is your claim to know anything about Telegraphy, and especially of Ocean Telegraphy?"

Well, without writing my autobiography, or drawing up a list of my qualifications (for, remember, the old copybook heading, "Self praise is no recommendation") I will merely say that my telegraphic experience commenced on Boxing-day, 1852; that I am still in harness, and ought to know something about it; and that something, but no more (it may be much less), I will try and give you the benefit of in a series of papers, in order to prevent our Editor being obliged to rely upon borrowed plumes to decorate the TELEGRAPHIST's pages; in doing which I shall endeavour to avoid all matter which can be found in text-books already published, and which can easily be purchased, if required, by the student.

The chief difficulty which presents itself to my mind in sitting down to make a commencement is, where to begin. "Begin at the beginning," says one. "And where's that?" "Tell us all about it," says another. "But that is as vague as before." "Well," says a third, "have you not said you were going to write about Ocean Telegraphy?" "Yes, I have; but would it be right to try to put the roof on a house before the walls are built to support it?" "I suppose not." "Well, then, we must begin our building by laying the foundation, and then building up the walls by degrees, prepare the edifice to support the roof; and, as Ocean Telegraphy represents the roof, it is very evident we must not begin with that, although we must keep it in sight as the distant goal to which we are journeying."

Now, I must select for my companion on the road the youngest and most inexperienced telegraphist, and while leading him gently along in short stages, so as not to tire him too much at one time—for a long journey has many milestones—I must try and interperse a little amusing chat, and reminiscences of the past which may recur to my mind as we walk along to the far distant goal, in order to make the journey a pleasant one.

As I am writing for the youngest ones who have just started on the first mile of the road, the elder ones, who have already got several stages on the journey before them must be content to wait till we overtake them, or else exercise their own powers to get on alone and arrive at the destination without us. If, however, I and my young pupil should catch them, then they can hear us company, and we shall be delighted to have them with us on the road for the remainder of the journey.

Now, my young friend, I assume that you have passed through

your probationary course (otherwise you can scarcely be called a telegraphist), that you have passed through the curriculum of the Learners' Gallery, or its equivalent, at some provincial station, and that you know well the alphabets of double-needle, single-needle, and printing. These, in my days of probation, were indispensable; and a rigid examination in *all three* of them had to be passed at a tolerably good speed, before a "learner" was admitted into a working gallery or department to see actual work performed. Country learners have an advantage in this respect, for they are generally instructed in the midst of the actual traffic, and its peculiarities grow upon them by infinitesimal degrees in every portion of the official routine; but it frequently happens nowadays that a telegraphist is only proficient in *one*, or *two*, and very seldom in *all three* of the systems above-mentioned. Old electricians cannot fail to notice the difference in this respect, the double-needle being very much neglected since the more general use of single-needle, and the extensive adoption of the Morse system (rendered still more effective by the Wheatstone automatic), which require only a single wire, whilst the double-needle required of necessity two wires—one for each needle.

I often look back, my young friend, to the days of the old massive double needle instruments, whose rapid and regular beats were like music to my ears, on the busy trunk lines, such as York, Manchester, Leeds, Birmingham, and others radiating from Founders'-court, Lothbury, London (the original LY), the signals being read off with ease at forty words a minute, by those experienced "Old Electricians." Can it be wondered at that a novice, fresh from the Learners' Gallery, stared with amazement when, after passing a successful examination, he found himself unable to catch a single word which they were reading off quite easily?

I was myself once writing "CS" (Parliamentary news) for another fellow-clerk, and when we came to count it up and time it, we found he had averaged forty-four words a minute, and I had manifolded four copies of flimsy at that speed for the Press. The reader sat leaning back in his chair, his legs crossed, and his feet resting on the instrument-bench, his favourite pipe in his hand ready for a smoke as soon as he could take his eyes off the needle-dials. At the end of the supply, when "PQ—NN" (end clear) was given, he merely gave "E" (understand) by touching the handle with his foot, and puffed away at his "pernicious weed," as Cowper calls it, till another lot was offered, as if he had performed no more remarkable a feat than that of reading a paragraph in a printed newspaper. But those good old times—I do not speak pecuniarily, for goodness knows the salaries were small enough, and increments few and far between—those good old times will never come back again, because modern appliances make even a better use of the *two* wires than forty-four words a minute, to say nothing of the duplex, quadruplex, and multiplex systems lately introduced. However, in the days of which I am speaking the double-needle was the king of telegraphic instruments.

By it, as fast as pencil could be driven,

Word after word, and sentences were given.

Upon this instrument, of course, like the modern Sounder, there was no record, no slips; the motions of the needles were alone the reader's guide, and he had to trust to the writer's capacity for putting down accurately on paper the words, letters, or figures, as he dictated them. Under these circumstances good and fast writers were indispensable; they were as important as good readers, for

Be it admitted that 'twere useless quite

To read with greater speed than one could write.

Nothing annoyed a good reader more than for a writer to get behind and have to stop him, and cause him in turn to annoy the sender by putting him back several words. We old electricians can look back upon those times with a feeling of affectionate remembrance; but we shall nevermore set eyes on the wonderful feats which used to be performed upon those favourite old instruments. One of the most novel applications of the electric telegraph, and one which has, I believe, never reached the eyes or ears of the public, was performed one Sunday for amusement, during that dull twelve hours' duty with nothing, or next to nothing, to do, by the writer of this paper, and a *confrère* at a station a long distance off. It was the transmission of a piece of music from the printed copy by the distant clerk to me, and written by me as it was received note by note, and which was afterwards compared and found correct. To do this we prearranged signals to indicate the position and duration of each note, but now we have merely to put our ears to the telephone and set the tune going at the other end to hear it to perfection. What a marvellous change!

Single-needle instruments replaced many double needles, and Bain's printing many others, as they required but one wire. Bain's printing was worked by a light tapper with single current, and was so arranged that at the receiving station a fine steel wire pressing upon chemically-prepared paper was decomposed by the passage of the current, thus leaving a blue mark on the paper. The action

was exceedingly rapid, so that the dots and dashes were perfectly defined, however quickly they were made, if the paper was in a proper condition; but many were the sorrows of the poor clerks (they were not called "operators" or "telegraphists" then) when the paper was either too wet or too dry, for if too wet the decomposition of the steel wire was too rapid, and burnt the paper, or it ran dots and dashes together in lines of irregular width, broad in the middle and pointed at the ends, rendering them difficult to decipher; and if too dry the decomposition was so feeble that only a faint and almost invisible line was made. Perfectly dry paper made no line at all. To get the paper of a proper dampness—neither too wet nor too dry—was a difficult matter; but when it was in good condition the greatest desire of the clerk was for plenty of work till his duty expired.

One day a rather amusing incident occurred. A novice had just been taken on. A message for the railway station-master was regularly received between 4.40 and 4.50 p.m. every day to announce the time of departure of the 4.40 train. The novice, at about 4.43 was requested to go to a certain instrument, and call out as loud as he could, "At what time did the 4.40 train leave?" He did so once, twice, and again, when the needles began to move, and the clerk read off the "DB" (railway message) as follows:—"4.40 up-train left at 4.45." The poor boy was astounded, and was under the impression that the people at a station some 40 miles away had heard his voice.

The alphabet for Bain's printing was not like the one now in use for Morse. When the Electric Telegraph Company agreed to adopt the international alphabet, notice was given to CQ (all stations) to prepare for the change, and from a fixed date to abandon the one and adopt the other. This was no easy matter. There were some letters whose combinations remained unaltered, and others whose names were changed. What was D to-day was to be V to-morrow, and so on. No one can enter into the difficulties of forgetting the one, so familiar to the old senders and readers that it was like a natural language, and adopting another which had to be substituted, but those old Electricians who had to overcome the difficulties; and is it to be wondered at that for a long time afterwards most amusing errors were made by mixing up the two alphabets?

Old electricians will remember the efforts which they made to establish *Our Magazine*—the published numbers of which I sometimes glance over—and that it died of sheer starvation after a very brief life; but I sincerely hope that the thousands of British operators, both male and female, will not suffer their TELEGRAPHIST to die a similar death for want of proper nourishment and pecuniary help. The price of their organ is so low that every telegraphic *employé* can well afford to purchase a copy monthly, or even fortnightly, and give the Editor grist for the mill, and some encouragement to keep the paper going, and thus supply the intellectual food which is so necessary to the telegraphist during his hours of leisure.

OLD ELECTRIC.

(To be continued.)

THE MESSAGE FROM THE SEA; OR, ON THE LOOK-OUT.

MOST of our readers will naturally connect the above title with some nautical adventure, and perhaps some will feel inclined to exclaim at first sight "What have we to do with fishing boats, or what connection has the Telegraphist with the briny ocean? We have troubles and bothers enough in our own offices to be 'on the look-out' for without going there to find them." Quite true; but, despite all that, my title is strictly within the bounds of the TELEGRAPHIST, and refers to something from the sea, after all.

I thought that it might perhaps interest some of our readers to learn a little about the special duty sometimes connected with submarine cable-offices. The ordinary work there, is of course, under usual circumstances, the same as elsewhere, viz., to get clear. Everything, as in other offices, may be going on quietly and smoothly enough when all is right, but, suddenly and unexpectedly, an interruption is reported from one of the tables. The instruments are carefully looked through; the connections are tried, but no fault is to be found. If another cable is available to the same coast, all we get for our trouble is, perhaps, "Why don't you answer?—look sharp."

But we *can't*, and then, with some little uneasiness, the question is silently asked, "I wonder whether it is the cable that is broken?"

Nobody relishes the idea, as it always causes confusion in the ordinary work, and nobody knows how long such an interruption may last.

On land, if a breakdown happens, the fault is easily found, and

soon repaired; but here, in order to discover the flaw, a cable-ship has to go in search of it, and may take several days to discover the cause of the disaster.

The weather, then, may be unfavourable, or other causes may delay the repairs, and keep us in official misery for some time longer, so that, at the best, we are living in a state of hoping uncertainty.

When, therefore, the cable has been tried in vain from the offices, the electrician is sent down to the cable-house where the shore end of the cable is landed, and where tests requiring special care must be taken.

This cable-house is in connection with the office in town, and the electrician's report is anxiously awaited there.

At last it comes: "Cable broken eighty miles from shore."

This settles the question. The company's cable-ship receives orders to get clear, and proceed with all haste to remedy the defect.

Meanwhile the electrician, with one or two assistants from the office, takes up his post at the cable-house as soon as the ship leaves port, the watch is set, and then begins the anxious "look-out" for "the message from the sea."

It is a wearisome and tedious work at the best, and, without diving into technical explanations, I will try to give a short account of what it means.

Every telegraphist knows something about a galvanometer. The galvanometer is an instrument used to measure currents of electricity. In a cable-house, however, the galvanometer is somewhat different to those used on land-lines in its manner of working.

It gives its deflections by throwing a narrow streak of light on a scale. When a current traverses the coils of the instrument and attracts the magnet, the mirror which is fastened on this will move, and consequently the light which is reflected from the mirror will also move, and give a deflection on the scale according to the strength of the current. And this deflection is what has to be looked for so carefully during a cable watch.

The cable is, of course, put to earth through the galvanometer, so as to be in readiness to receive any message from the cable-ship.

As this watching may extend over some four or five days, you will easily understand how anxiously the clerk on duty in the cable-house is waiting for "the message from the sea," or, in plainer words, for the ship to find the cable, cut it, and tell him that the fault has been found, and that connections between the two shores will be established in a few hours.

The methods of determining and remedying the faults are subjects it would be out of place to touch on here, although a great deal more could be said on this subject.

In the summer months such a visit to the cable-houses is not so bad, as they are mostly situate in fishing villages, and a change from the stuffy atmosphere of town is very welcome.

NORTHUMBRIA.

THE TELEGRAPHIST ABROAD.

MADEIRA.

(One of the principal Stations of the Brazilian Submarine Telegraph Company.)

MADEIRA, situated off the north-west coast of Africa, is 35 miles long by 14 in its greatest breadth, and contains an area of 290 square miles. The whole island is a mass of basaltic rock, which rises abruptly from the waters of the Atlantic. Its highest point, called the Peak of Ruivo, reaches an altitude of 6,056 ft., and several other peaks are upwards of 4,000 ft. above the sea. The island is abundantly supplied with rivulets. These form numerous cascades as they leap from rock to rock, through valleys and ravines covered with the richest vegetation. Among the most characteristic features in the natural scenery of Madeira are the deep ravines or gorges that everywhere intersect the mountains, sometimes cutting through them almost to the very base. One of the most striking of these is the well-known Curral. Just before reaching this romantic and attractive locality (after a ride of some hours from Funchal in the direction of N.W.), the traveller mounts a small ascent which brings him to the summit or edge of the ravine, when the whole scene bursts suddenly upon the view. The eye descends to the depth of two thousand feet into the immense chasm below, and wanders over the ragged and broken outline of the many peaks that rise from its very bottom, or upwards, following the grey, precipitous rocks till their summits are lost in the clouds. The wild beauty of the scene is increased by the numerous plants and shrubs that spring from out the crevices of the rocks. Following the descent of the gorge, the gaze of the beholder at length rests upon the secluded church of Nostra Senhora de Livre Monte, and

the peasants' cabins imbedded in the dark and luxuriant foliage beneath.

The descent into the Curral is not wholly without danger. The road winds round the side of a precipice, where a single false step would plunge both horse and rider into the gulf that yawns beneath. The declivity is gradual, so that it takes upwards of an hour to reach the bottom of the ravine. Continuing on, the gorge opens towards the south, where the streamlet of the Curral, joined by several lateral branches, forms the river Socorridos, which empties itself into the sea at the ancient town of Camera de Lobos.

Throughout Madeira groves of the chestnut and pine-trees stretch along the higher declivities of the hills, while the large leaves of the banana wave in the lower plains, and the splendid foliage of the palm-tree is seen overtopping the roofs of the houses. But the vine forms everywhere the predominant feature, and is assiduously cultivated.

Within recent years, however, a disease has prevailed amongst the vines throughout the island, and has almost entirely destroyed the crops for several successive seasons. Great distress has thence ensued to the inhabitants.

The island of Madeira is much resorted to by invalids (particularly those afflicted with pulmonary complaints) on account of the mildness and uniformity of its climate. At Funchal, the principal town, the mean temperature of the year is 67 deg., and there is a difference of 10 deg. only between the hottest and coldest months. Occasionally, however, during the summer the hot blast of the sirocco is experienced, and the heat is then, for a time, intense.

The population of Madeira amounts to 116,000, nearly all of whom are engaged either in the culture of the grape or in the wine trade. A large portion of the wine is exported to London, and most of the principal wine-merchants are English. The capital, Funchal (25,000 inhabitants), is situated on the south side of the island.

At the office of the Brazilian Submarine Telegraph Company an excellent little magazine, entitled "The Monthly Correspondent," is published. The editorial work is done, we believe, by Mr. Edward Raymond Barker, an able member of the B.S.T.C. staff at Madeira.

The island of Madeira belongs to Portugal.

TELEGRAPHIC ERRORS.

BY A GOVERNMENT TELEGRAPH CLERK.

GLANCING the other day over the financial intelligence of a London evening newspaper, I lighted, amidst the dull details of traffic receipts and discount charges, upon a paragraph which I read with an amount of regretful interest which I did not conceive an announcement in the unexciting column in question could by any chance have awakened. The paragraph to which I am referring ran somewhat to this effect: The directors of a South African gold-mining company desired to correct a mistake which had occurred in a previously-published report with respect to the amount of their week's business, and they added that in consequence of constantly-recurring errors in the telegrams despatched to them by their agents on the subject of the working of the Company, it has been decided to abandon for the future this speedy but unreliable means of communication, and to revert to the slow but comparatively sure medium of the mail-bag. Now, nobody who is unfortunate enough to be compelled to make frequent use of the telegraphs, and who deems it the duty of a directorate to furnish its constituents with accurate information as to the position of their venture, can deny that the board of the company in question is amply justified in the step it has taken. Commercial men must all know that absolute reliance is never to be placed upon the accuracy of a telegraphic despatch, and that before the message is acted upon, confirmation of it must be received by post; while often and often communications sent by wire are mutilated out of all recognition. Newspaper editors, too, as one may see daily, recognise the same fact. Their comments upon the various items of news telegraphed to them from all over the world almost invariably allow for the possibility of subsequent correction or contradiction of the information upon which their articles are based. In fact, wherever the telegraph is much used, there seems to be a growing belief that its accuracy is not to be depended upon, and that, other things being equal, if it can be done without, so much the better for all concerned. To me it seems a somewhat serious matter that what, next to the locomotive is, perhaps, the greatest invention of the present century, and one which has provided employment in every part of the globe for tens of thousands of people, should be in danger of being

regarded as a nuisance rather than as a benefit to society; the more so as, after an experience extending over fifteen or sixteen years, I am quite convinced that there is no reason why the telegraph should not be as accurate and reliable as it is speedy. The authorities have, by the provision of fast instruments, more wires, and new offices, reduced to very nearly its lowest limits the time occupied in the transmission of a message. But while improvement in this direction has been steadily progressive, retrogression in the matter of accuracy has been quite as marked, and errors are incomparably more frequent than they were ten or a dozen years ago. This is partly due to the deterioration which the staff underwent before Mr. Fawcett improved the position and pay of the clerks. But there are other causes; and, believing the subject to be one of importance to every class of the community, and knowing that even now telegraphy is but little understood by those who do not earn their living by the art, I propose to point out the chief of these causes, and what I imagine to be their remedies.

In the first place, then, I believe the Post Office authorities made a very great mistake indeed when they resolved upon amalgamating their department and the telegraph department. The two branches of the public service have absolutely nothing in common, except that they are both engaged in bringing together more or less quickly people who are more or less distantly separated from one another. Any person of ordinary capacity can, without previous training, perform Post-office work. Anybody can, for example, without undergoing any preliminary instruction, obliterate the stamp on a letter, put a letter in a bag, or carry it to the house of the person for whom it is intended. Nor is it necessary to undergo apprenticeship before one can melt sealing-wax, or wheel a barrow to a railway station. Nobody would, without practice, do so well or so quickly—by a hundred times—what an experienced "sorter" can do; but, still, he would get through the work in some sort of fashion, and without grave inconvenience either to himself or to others. But this is not true of telegraphy. Some of the best instruments are now so fearfully and wonderfully made—such a mass of delicate wheels, springs, levers, and so forth—that an inexperienced person cannot even touch them without the risk of throwing them out of regulation; while at least five years' training is required to turn out a thoroughly good operator. For a long time the learner finds it impossible to signal his letters correctly. He turns his "O's" into "G's," his "Y's" into "C's," his "A's" into "I's," his "H's" into "S's," and makes other blunders which are, perhaps, easily detected in plain English, but which are often written down in technical, trade, and financial terms, the message being thus rendered illegible. Omitting all reference to the smattering of electrical science which every good clerk should possess, it requires a five years' training before a thorough knowledge of the telegraphic art can be acquired. Those who are not practical telegraphists can, therefore, understand little of the business of the department. Yet, notwithstanding all this, the telegraph department has been entirely subordinated to the officials of the Post Office; and, everywhere, postmasters, many of whom hardly know a magnet from its armature, and still fewer of whom could regulate a "pecker" or manage a "fast relay," have the ultimate word in everything that concerns the organisation and working of the telegraph department. What, I should like to know, would be thought of a large contractor who determined that his masons, including their foreman, should be under the arbitrary control of the foreman of his carpenters, or of the shipowner who decided that while the sailing orders might in the first instance be given by the captain, the course might at any moment be altered by the chief engineer? Why, such conduct would, if we had no Bankruptcy Act, be described as absurd. The conduct of the Government in the matter of the telegraphs deserved to be similarly stigmatised. No one will be surprised to hear that existing arrangements result in the issue of the most ridiculous orders, and that among all clerks who have the interest of their work at heart, there exists a desire to see the entire control of telegraphic business placed in the hands of practical telegraphists of long experience. Nor would this reform be difficult to effect. Each office has its superintendent, who is generally the right man in the right place; but above him is the postmaster and his veto. All that need be done is to deprive the latter of his power over the telegraphs. There need be no increase of expense, and no further alteration of existing office arrangements.

From, I presume, a desire for economy, there have recently been made two changes which have, in my opinion, greatly tended to increase the liability to error—the substitution of "sounders" for recording instruments, and the abolition of the system of comparing messages as they reach their destination with the originals, the second change being to some extent consequent on the first. The history of sound-reading in telegraphy is briefly this. In ancient days—ancient so far as telegraphy is concerned—inventors had

great difficulty in making an instrument which would leave legible marks upon the slip of paper or "tape." They tried chemically-prepared paper, ink, and an embossing pencil; but none of these devices was anything more than a partial success, while all were trying to the eyes, especially at night-time. This being so, the clerks, of their own motion, learnt to recognise the symbols by their sound, and so by the ear they could materially assist and relieve the eye. About the time, however, that the Government acquired the telegraphs, a perfect recording-machine was invented; and with a careful clerk, a legible "slip," and a tolerably clear sound, the liability to error was reduced to a minimum. Furthermore, a careless clerk was made careful, for the message as received was compared, in London, with the document entrusted to the Post Office; and the errors, if there were any, could be traced to the proper source. By reference to the printed tape, it could be at once seen whether the mistake had been made by the receiving or the sending operator, and in cases where it was deemed to be merited, a suitable punishment could be meted out to the wrong-doer. But it suddenly occurred to the authorities of the Post Office—who, it must be remembered, know little or nothing of telegraphy—that by making all clerks, whether they had sharp or dull ears, read entirely by sound, a few pounds a year might be saved in paper. I do not doubt that to the same great mind which conceived this mighty economy we are indebted for another, almost equally great, but unattended by unfavourable results—the reduction, I mean, in the size of telegraph forms and delivery envelopes. Well, the result of this great economic reform has been to deprive the clerk of the more important means of securing accuracy in his work, since the ear is much more readily deceived than the eye, especially in large offices where hundreds of sounding instruments are clicking away at one and the same time. Besides, it has engendered a certain amount of carelessness in the operators, because, as no record remains of the manner in which the message was sent, the operators have only to say, in case of inquiry, that each is certain the error was not made by him, and the investigation must end there. The postal authorities see this clearly enough, and therefore they have abandoned the system of the comparison of messages above described. In my opinion, we must lay at the door of these changes the greater part of the errors of which so much complaint is made.

I fear that in saying that female labour in telegraph offices is a fruitful source of blundering, I shall draw down upon myself the wrath of those who contend that in nearly every sphere of life woman is man's equal, and, therefore, I have left until the last what I have to say on this point. I am prepared neither to admit nor deny that female clerks might *ceteris paribus* be the equals of male clerks. What I do affirm is that they are not so now, and that to this fact is due a good deal of the unreliability of a telegram. It has been rightly said—I believe by no less an authority than Mr. Fischer, the superintendent of the Central Telegraph Office, London—that the reason females seldom become competent is that they do not go to work *con amore*. A girl knows that before she is old enough to be efficient she will in all probability have become a wife, and in any case she does not propose to remain in a telegraph office all her life, the duties of which are to her a purely temporary employment, resorted to as a means, perhaps, of procuring pin-money, or from some other cause not likely to endure. It does not, therefore, pay her to make herself efficient. Let anyone who cares to do so prove this for himself, by gaining the readily-granted permission to look through one of our large offices. There he will see that while the lads—those, at any rate, who are likely to prove worth anything—are trying in every conceivable way to gain a knowledge of their craft, the girls are sitting at their instruments sewing, knitting, or reading novels. The ultimate result is, of course, that the young men rapidly improve, while the young ladies remain, generally speaking, always slow and never sure. It is, perhaps, necessary to say that the male clerks are not in the least affected by the employment of female labour, and that the best of feeling obtains between the sexes. It was at first thought that as the ladies could not perform night work, an unfair share of it would fall on the male staff; but, so far as my experience goes, this has not proved to be the case, the business of the department having increased to such an extent that the relative proportion of day work remains unaltered. In what I have said, therefore, if naught is extenuated, naught is set down in malice. I have simply stated a fact which I believe to be indisputable, and which I know contributes to the number of those telegraphic inaccuracies which cause so much inconvenience and even positive loss to the public, and which it is so desirable to reduce. I think that enough has been said to show what remedies should be adopted. Let, in the first place, the department be managed by practical men, and the rest will follow. It is universally admitted that the Post-Office is most creditably and even wonderfully worked in this country, and the utmost confidence is

felt in that great institution. Why? Because the responsible authorities are everywhere thoroughly practical men, and when the telegraph department is similarly ruled, a similar result will, I am convinced, be achieved.

MM—BB.

[The following account of a special delivery by our esteemed contributor, "Old Electric," will be read with interest alike by the veterans of the old companies and the present generation of telegraphists. The former will doubtless fondly linger over the memories of many a pleasant ride on horseback, while the latter will have an opportunity of contrasting the jovial life of a telegraph clerk before the transfer with the monotonous existence of the starchy Government official of the present day.—ED. TEL.]

IN a former sketch I gave an account of the special delivery of a despatch by man and horse (MH). I now purpose giving our readers an account of the delivery of an important Government despatch at one of the Royal residences. The nearest local office was closed, and the district office received the despatch with the instructions given in the title, "MM—BB"—i.e., to be delivered by special boat.

The despatch arrived, of course, late in the evening, as the local offices usually closed at 8 p.m., and it was dark before a boat could be hired. To go for a dozen miles by water at that time of night was not very tempting to the boatmen, and we had some difficulty in coming to an agreement with them before starting on our voyage.

Sundry necessary preparations having been accomplished, and the gear got all straight, we left the jetty—two boatmen and two telegraphists besides myself, five in all—for a night's cruise. Having hoisted sail and got all well trimmed, away we went, with a pretty favourable breeze, into the darkness of night. We soon left behind us the lights of the town, which, from being innumerable at first, soon reduced in number to a very few, until the last was finally lost to view.

Before us, however, a lighthouse marked the point of land on the southern bank of the river.

A few sailor's yarns from the boatmen helped to while away the time in the quietness of the chilly evening, and we soon passed the lighthouse and opened into the rougher waters of the Channel, and here matters assumed a more lively aspect as the boat scudded through the waves and required increased care and vigilance on the part of the boatmen.

In due time we arrived, and, having with some difficulty made out a landing-place, three of us disembarked, and, leaving the boatmen to take care of the boat, we pursued our way through the small town, and soon got on the road leading to the palace.

Having reached the entrance, the guard at the lodge challenged us as to our business, and, being satisfied, allowed us to pass through, and, pointing to a single dim light in the distance, said that light was in the palace.

Thanking the kind and considerate guard, we left him and made for the light. Above, below, and all around, darkness reigned supreme. Road, grass, or flowers were all alike to the eye, and to follow the road was found impossible; so, keeping close together to avoid losing each other, we determined to take a straight course to the light in the distance.

As we progressed along this straight line we felt passing under our feet what might have been gravel, grass, or flower-beds alternately, until at length we reached the building; but to find a bell-pull—aye, there was the rub. We could not see a door, much less a knocker or bell-pull. Feeling our way along the walls, first one way, then another, we at last found a door and also a bell-pull, and were not long in "agitating the communicator."

This brought to the rescue a personage who demanded an account of ourselves and of our business, and having found that we were not members of a secret society, but *bonâ-fide* electric sparks or lightning-grinders, whichever you choose (I suppose "telegraphists" or "operators" would be the proper term now-a-days, but I am speaking of thirty years ago), this personage asked us inside to sit down, and having provided us with a can of ale and a drinking-born, left us to subdivide the liquor, while he proceeded to find the *destinataire* of the despatch in some far-off portion of the stately edifice. After a time he returned, bringing with him the reply to the despatch, together with the special charges for delivery, and our errand was so far accomplished.

On leaving the palace everything and everywhere was, to use a common expression, "pitch dark." The light at the gateway marked the goal for which we made, again taking a straight course as being the only possible one, and having reached the guard, and bade him good-night, we were once more on the road. Walking

on, we soon reached the outskirts of the town, and my companions, being of jovial dispositions and fond of practical joking (notwithstanding my protests), indulged themselves in ringing door-bells, rapping with knockers, and unhooking garden-gates on our way to the boat. Both my companions are, I believe, now dead, but no doubt some poor, innocent creatures were credited with this piece of mischief when the daylight disclosed it. How many a sweet slumber was disturbed that night by bells and knockers it would be difficult to imagine, but that they were not a few is very certain.

After a time, we found the place where the boat was lying, and embarked on our homeward voyage; but beyond the coldness of the night, the darkness, and a snow-storm during part of the way, there is not much of interest to mention. Suffice it to say that we got back safely, paid our boatmen, proceeded to the telegraph office and handed in our reply, and then separated to proceed to our respective homes, there to spend the rest of the night in the arms of Morpheus, it being then about three o'clock in the morning.

OLD ELECTRIC.

DICTIONARY OF TECHNICAL TERMS USED IN TELEGRAPHY.*

DYNE.—The C.G.S. unit of *Force*, that which gives a velocity of one centimetre per second to one gramme weight, after acting for one second.

EARTH.—Name derived from the old mistaken notion that electricity is pumped up from the earth as a great reservoir. *Putting to earth* and *earth connection* mean a general return circuit which, for economy, is formed through the earth by means of "earth" plates, buried in moist strata at the various necessary points. But any conductor common to several circuits is technically called "earth."

ELECTRODES.—Faraday's term for the poles or plates leading the current into and out of a cell.

ELECTROLYSIS.—The act of decomposition by an electric current. Secondary electrolysis is a decomposition supposed to be effected by the chemical action of the substance really set free by the current.

ELECTROLYTES.—Bodies capable of being decomposed by an electric current. They must be composed of (or rather be capable of breaking up into) two radicals; therefore, substances which contain three or more radicals are not electrolytes.

ELEMENTS.—The ultimate substances into which all the bodies we know can be resolved, and which, themselves, have not been resolved into any simpler bodies. There are sixty-three elements known, and several more suspected. They are assumed to exist in the form of *atoms*, and further information will be found under that head and under equivalents.

EQUIVALENTS.—All chemical actions take place in a definite ratio, which is explained by the atomic theory as due to the combination of one, two, or more atoms of one substance or element with one, two, or more atoms of others. Each element has its own equivalent weight, as compared with hydrogen as one. There is much confusion of ideas, due to the change of modern chemistry from the old system of stating re-actions in equivalents to the modern system of stating them in atoms. The relation of electricity to these equivalents is such, that in a change or circuit composed of any variety of compounds of two of these bodies (which are, in fact, elements, radicals, and ions), the same current would release from combination the relative weight set against each substance. The weights themselves are relative or abstract, but in this work they are taken as "grains" for the purpose of getting a definite electric measure of current and work.

EQUIVOLT.—A unit devised by the author to connect together E.M.F. and quantity. It is the energy engaged in effecting 1 equivalent of chemical action in a circuit of 1 ohm resistance and under the volt electromotive force. Its mechanical equivalent is 4,673 ft. lb. This unit, when thoroughly comprehended, will greatly aid in understanding electricity, and the doctrine of the correlation of forces.

ERG.—The C.G.S. unit of energy. The work of 1 degree in 1 second.

ERG-TEN.—10,000,000,000—ten thousand million ergs, written 1×10^{10} on the index notation.

EXTRA CURRENT.—The induced current of higher E.M.F. which appears in a wire, especially when wound in a helix when the current is broken.

FARAD.—The unit of capacity; 1 coulomb under 1 volt.

FIELD OF FORCE.—The space between the poles of a magnet or two electrically charged surfaces and other active forces.

* From Sprague's "Electricity," by kind permission of the author.

INDUCTION.—This is the name given to effects produced outside of the body exerting a force, or out of the circuit to which the force is directly applied. Thus a magnet induces magnetism in neighbouring magnetic substances, and then attracts them. A static charged surface is said to induce an opposite charge upon surfaces presented to it. A current in a wire induces currents in other conductors parallel to it.

INDUCTORIUM.—A name for induction coils.

INSULATORS.—Bodies possessing high resistance; all, however, allow some current to escape, or rather "charge" to be lost as current. They are called "electrics" because friction develops electric excitement in them. Ebonite is the highest "non-conductor," paraffin, sulphur, and glass follow. Telegraphic insulators are the porcelain cups, &c., to which the wires are secured, and which prevent electric communication being formed between the wires and the earth through the posts.

INTENSITY.—The old term for the properties now described as electromotive force and tension. Batteries were said to be arranged for intensity when the cells were coupled together in series. The term leads to such confusion that it is best abandoned altogether.

INTENSITY OF CURRENT.—A term adopted from the French *intensité de courant*. It means "quantity;" and the best writers now use the simple word "current" to avoid the confusion of these conflicting terms.

IONS.—Faraday's term for the two parts into which an electrolyte breaks up. They may be either single atoms of elements, doubled atoms which still act as one chemically, or they may be compound radicals like cyanogen, ammonium, and the radicals of acids. They are of two classes, named from the electrode at which they appear; but it must be remembered that the same radical may be an Anion at one time and a Cation at another, according as it is united with a radical more or less high in the order of affinity. (See Anions and Cations in our July number, page 100.)

JOULE.—The British Association unit of energy.

KNOT.—The geographical and nautical mile, which some affect to write "naut," though the name is derived from the corresponding knots on the log line used at sea. 2,029 yards.

(To be continued.)

THE SOCIETY OF TELEGRAPH ENGINEERS AND ELECTRICIANS.

THE CONVERSAZIONE AT KING'S COLLEGE.

PROFESSOR GRYLLS ADAMS, F.R.S., the president of the above society, gave a splendid entertainment to the members and associates on Thursday, July 3, in the Libraries, Museum of Physical Apparatus, Physical Laboratory, and Art Galleries of King's College, London. In the entrance-hall the Professor met the *élite* of the electrical world, and seldom has it been our lot to spend an evening in a company so purely scientific and so congenial to our tastes as that gathered together on the 3rd ult. Among the shining lights of the profession we noticed Mr. Alexander Stroh, that mechanical genius who is too little known outside his own particular sphere, Mr. W. H. Preece, Mr. E. Graves, Mr. C. E. Spagnoletti, Professor Hughes, Mr. R. E. Crompton, Mr. Le Neve Foster, and a number of gentlemen whose names are "as familiar as household words."

Some of the finest specimens of electrical apparatus were exhibited by Messrs. Siemens Bros., Latimer Clark, Muirhead, & Co., Elliott Bros., R. E. Crompton & Co., Professors Ayrton and Perry, and Professor Fleming Jenkin; indeed, there were so many beautiful instruments on view that the time seemed too short for a perfect examination of each exhibit. The greatest attraction of the evening was Professor G. M. Minchin's Actinometer. To see a beam of light transformed into electricity was a sight novel even to many of the savants who had accepted Professor Adams' invitation.

Connected to a mirror-galvanometer was a small cell. At the end of the scale we noticed the spot of light, which was stationary so long as the cell was in the dark; but immediately Professor Minchin held a bit of burning magnesium wire in front of the cell the spot of light quickly moved to the other end of the scale. It must not be supposed that the cell acted as a thermo-pile. The action was due to the chemical or actinic rays of the spectrum when the blue rays were cut off, and the heating (red) rays only allowed to pass. There was no deflection of the galvanometer needle.

An exhibit was made under the superintendence of Mr. Latimer Clark and Mr. John Muirhead, showing the effect of retardation on an artificial cable, equal to about 8,000 miles of the Atlantic type at present being made for the Commercial Cable Company

(Bennett-Mackay Cables). This expression was the more interesting as the effect of retardation had never previously been shown on so long a length of cable. The artificial cable was composed of a number of Muirhead's Patent Inductive Resistances, and Condensers, which form part of the apparatus for working the next Atlantic cables on Muirhead's Duplex System. This system is also working the Atlantic cables of the Western Union and Direct United States Cable Company.

The effect of retardation on this length of cable under the circumstances was very marked, the current taking about three seconds to traverse the entire line to show a signal at the distant end. The total electrostatic capacity of the cable was about 2,400 microfarads, and the total resistance about 119,200 ohms.

In addition to this exhibit there were several instruments connected with the working of the duplex also shown.

At the same time, Mance's new system of testing apparatus was exhibited. This has been specially designed for fault-testing on cables. The instrument is of a very compact and neat form, and should simplify the difficulties experienced in localising faults from on board ship.

The apparatus exhibited was manufactured by Latimer, Clark, Muirhead, & Co., Limited, of Westminster.

Refreshments were served in the Engineering Drawing Class-rooms, and there was an abundance of delicacies, including ices, strawberries, confectionery, sandwiches, claret-cup, jellies, &c.; indeed, Professor Adams proved himself an admirable host, and the members of the Society will long remember that delightful evening spent within the walls of the *Alma Mater* of so many distinguished men of science.

THE TELEGRAPH ENGINEERS AT THE HEALTH EXHIBITION.

ON Friday, July 4th, the Conference Room at the "Healtheries" was placed at the disposal of the members of the Society of Telegraph Engineers and Electricians. A large number of invitations were issued; but the majority of the electricians who put in an appearance were only those connected with electric lighting, and we missed many familiar faces. The general public, too, was but poorly represented; and when the clock struck eleven the room reminded us of a country theatre in the summer time; and the courteous secretary of the society, Mr. Webb, made a very good manager, anxiously looking at the door for the obstinate people who would pass on notwithstanding his tempting "bill of the play." At last a few members strolled in, and a start was made. The paper on "Electric Lighting in Relation to Health" was read by Mr. R. E. Crompton, who was so terribly nervous that he made a very poor impression upon his audience. We think that Mr. Crompton would have got on much better if he had dispensed with his MS. As an impromptu speaker, Mr. Crompton is not the worst we have heard, but, with the "copy" before him, the eminent electrical engineer was "not in it." It was quite a relief when the discussion commenced.

One gentleman, whom we will call the "low comedian" of the occasion, stepped forward, and made everybody laugh, as well as himself; but he did not say anything either for or against electric lighting. Then a gentleman in the middle of the room strayed away from the subject altogether, and talked about bad ventilation and avaricious landlords. Mr. Willoughby Smith gave us an amusing account of his neighbour, who had an installation which turned out a regular nuisance. The silent gas-engine was anything but silent, and occasionally the light was obtained at the expense of Mr. Smith's and other neighbours' gas.

Mr. George Ofor, of the South-Eastern "Brush" Company, made a capital speech, and solved the whole question of electric lighting. He declared that lighting by electricity would never become popular until the light could be supplied from central generating stations, and the wires laid on in people's houses, just in the same manner as the gas companies supply gas. Mr. Ofor described the successful installation at Colchester, where he said the electric light was supplied to houses and shops at a rate equivalent to gas at 5s. per 1,000 feet. As we listened to Mr. Ofor's sensible remarks, we could not help thinking that what has been accomplished in Colchester might be done in London. But we suppose that very little progress will be made until those obstacles, vestries and vestrymen, are swept away by Sir Charles Dilke's excellent scheme.

Mr. Swan and Mr. Crompton spoke briefly but sensibly, and the meeting terminated.

In the afternoon a most important and enjoyable lecture was delivered by Dr. W. H. Stone, M.A., M.B. Oxon, F.R.C.P., upon "The Physiological Bearings of Electricity on Health." No doubt

it will be considered a poor compliment to the Doctor when we state that he understands the art of lecturing. His points never failed to hit the mark. There was no anti-climax to his lecture. He did not read a paper, but he talked cleverly for about an hour, using the best of English, and none of his auditors felt inclined for a nap, although the "Health" Exhibition Conference Chamber was shockingly ventilated, and there was more CO₂ than O₂ in the atmosphere. No greater compliment can we pay Dr. Stone than to say that he was a perfect master of his subject, and we felt quite sorry when he finished his able lecture. The subjects dealt with by Dr. Stone included the electrical resistance of the human body and the results of the lecturer's experiments at St. Thomas's Hospital, were highly interesting. The discussion was not equal to the lecture. One medical gentleman was so dreadfully nervous that we prayed for the end of his remarks. An electrical engineer, who had a smattering of anatomical and physiological knowledge, got entangled in a network of capillary arteries, veins, and lymphatics, and more than once caused Dr. Stone to smile incredulously and shake his head despairingly, as the engineer floundered about in "strange waters." The climax was reached when the speaker declared that a man died after a powerful current passed through his body, because he couldn't live any longer!

After the laughter had subsided, the venerable electrician, Mr. Latimer Clark, made an excellent speech, and thus terminated a most enjoyable afternoon. The refreshments we paid for at the Exhibition were vastly inferior to the choice viands provided gratuitously at Professor Adams' soirée. We may be difficult to please in the science of good eating; at any rate, the "Bouillon Duval" at the Healtheries has no charms for "The Telegraphist."

W. L.

ALL the arrangements between France and Canada for a postal treaty have been completed, and the papers only await the signature of the French Foreign Secretary to become law.—Canadian correspondent of the *Liverpool Journal of Commerce*.

THE TELEGRAPHIST OF THE PRESENT.—(A fact.)—Wet day. Single needles showing deflection. Probationer (running in great excitement to Supt.)—"Please Sir, will you come to the W. Z. circuit? The wire's stuck all on the one side, and I can't get 'n up at all." Superintendent turns his head aside. Probationer fondly imagines it is to conceal his anxiety.

CAREER OF A CABLE SHIP.—The career of the telegraph steamer *Professor Morse* has been a strange one. She was built on the Clyde in 1865, and was originally intended for a blockade-runner during the late Civil War in the United States. The war having ceased at the time of the vessel's completion, the vessel was converted from a paddle into a screw steamer. She made her *début* as a collier, being christened the *Aline*. She was bought in 1870 by Sir C. Bright, and fitted up as a cable ship; renamed the *Suffolk*, and was used in laying the West India cables. In 1872 she was sold to the West India and Panama Company, and by them sold to the Western Union Telegraph Company in 1875, when her name was again changed—this time to *Professor Morse*. She was used by the company in repairing cables, &c., for several years, till finally, in 1883, she again changed hands, and was used in the coal trade until lately wrecked in the Sound. She is now undergoing repairs and changes, upon the completion of which she will be used in the fruit trade.—*Telegraphers' Advocate*.

FISHING BY ELECTRICITY.—An exchange says that recently a new iron steamer, with an electric attachment, for fishing in the Java seas, was thoroughly tried on the Clyde, and the result was up to the most sanguine expectations, and she has started for her destined arena. She carries a powerful submarine electric arc lamp enclosed in a water-tight casing of glass, as a mode of attracting fish and catching them by means of nets. This is the first application on a practical scale in Great Britain of the electric light to such purposes. The lamp is very strong, being 15,000 candle power. In the test the submarine lamp was lowered into the sea some few feet below the surface, and subjected to a four-hours' continuous working trial. The engine and dynamo, which are placed in a convenient corner of the engine-room, made a speed of 700 revolutions per minute, with the result of a perfect illumination of the sea for a considerable distance around the lamp, which, as the darkness of the night came on, had a very novel and striking effect. The trial was over at 10 p.m., when the lamp, still burning brilliantly, was hoisted up from the deep and found to be working in perfect order. It is said that this will revolutionise deep-sea fishing by insuring immense fares at a slight expense and with only slight risk of life, because of the almost perfect seaworthiness of the ship, a very important consideration, which must in time win the approval of fishermen.—*Electrical Review* (New York).

Editorial Notes.

THE article on "Telegraphic Errors," by a Government Telegraph Clerk, opens a subject which has been a standing grievance ever since the transfer of the telegraphs to the Government. It is a very difficult subject to handle, because the Post Office officials who regulate the business of the Telegraph Department are entirely free from blame. There are few telegraphists who would turn up their noses at a comfortable Postmastership, and we cannot conceive any old company's man insane enough to refuse a sinecure with £500 or £600 a-year in the Postal Department simply because he had been brought up a telegraph man. The fault lies with the legislators who organised the amalgamation of the two branches—postal and telegraphic. The Post-office officials had the telegraphs forced upon them, and they naturally introduced their discipline and red-tapeism, much to the chagrin of our old friends who had been used to a sort of free-and-easy life under the old régime. We do not wonder at these kicks against the pricks of Post-office authority; we are surprised that a monster petition, signed by every telegraph man from the chief engineer down to the last appointed messenger has not been carried to the House of Commons, praying for a dissolution, and the appointment of a Telegrapher-General as well as a Postmaster-General. Common sense tells us that men who have been almost cradled in a telegraph office are better able to manage electrical matters than men who never saw an instrument before the transfer. Who has not heard of the grocer postmaster who, when told by the lineman to send a current to the next station, replied, with charming simplicity, "I'm sorry to say we're out of currants, will a raisin do as well?" or the old post-mistress of a country village who, when asked by the Inspector if she had "got the needle," bounced out of the shop and declared he was the rudest man she ever met. We do not wish to infer that the postmasters of our big commercial centres had never seen a telegraph instrument before the transfer; but we know well enough that their experience of the work had been extremely limited, and, in many instances, it had not extended beyond the public side of the counters of the old companies. We can understand how galling it must be for the decision of an experienced telegraph superintendent to be set aside by a post official, who cannot possibly be competent to act as a judge of appeal. We repeat that the postmasters are not to blame. The gentlemen who have been made responsible for the telegraphs ought not to be looked upon as targets for telegraphists to fire at. It is the system which is bad, and we hope that the time is not far distant when the telegraph service will be in the hands of telegraph men, against whose decision, in all matters relating to telegraphy, there will be no appeal.

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OCEAN TELEGRAPHY.—It gives us great pleasure to announce to our readers that in future the articles on "Ocean Telegraphy" will be contributed by an experienced English submarine engineer. The papers will be written in a popular style and free from algebraical formulæ.

♦ ♦ ♦

SUNDAY DUTY IN THE PROVINCES.—Is Mr. Fawcett still vacillating, or has he decided to put the provincial telegraphists on the same footing with the T.S. clerks? Why should London men receive extra pay for Sunday duty, while the provincial men are expected to work for nothing? It is a piece of rank injustice, and we trust that the meetings which have been held in Birmingham and Edinburgh will rouse the responsible parties from their torpor, and induce them to give the provincial clerks their due.

♦ ♦ ♦

OUR AMERICAN COUSIN.—Mr. Johnston the Publisher and Editor of the *Electrical World* and the *Operator* (the "Telegraphist" of America), paid us his promised visit a few days ago, and we must confess that we spent a most enjoyable evening in that gentleman's company. The *Electrical World*, we are pleased to learn, has grown into an excellent property. A journal so admirably got up and so well edited, cannot fail to succeed in a go-ahead country like America. We asked Mr. Johnston if he would like to visit the Central Telegraph Office, and some of our great Electrical Works, but our American Cousin drily replied, "I have come over here for pleasure this time; and I do not intend visiting any place connected with business." We could not help agreeing with him, for we know he will have plenty of work when he gets back to the hurly-burly of New York. Mr. Johnston is at present enjoying the summer months with his family in a quiet corner of his "Emerald Isle." He returns to America in August.

Literary Notes.

BERLY'S UNIVERSAL ELECTRICAL DIRECTORY AND ADVERTISER FOR 1884. (London: William Dawson & Sons, 121, Cannon-street, E.C.)—We have much pleasure in announcing the third annual issue of "Berly's Electrical Directory"—a book which is as indispensable to the electrician as his technical papers and electrical journals. The work is divided into three sections—British, American, and Continental—and opens with some interesting remarks on the past year. In noticing the appearance of new electrical periodicals in 1883, we are rather surprised that Mr. Berly remembered the *Postal Telegraphic and Telephonic Gazette*, and omitted the *TELEGRAPHIST*, a journal of popular electrical science, which is likely to survive a few of the purely technical papers which have sprung up of late years. The tables and formulæ are correct, and will be found of great service. The list of British electrical publications, with names and addresses of publishers, prices, &c., will also be acceptable. A complete list of the members of the Society of Telegraph Engineers and Electricians is not the least important item in this admirable compilation. The "get-up" of the book reflects the highest credit on the publishers. The paper might have come from America, and the ink and type are as near perfection as they can be. We understand that the sale of "Berly's Electrical Directory" this year has exceeded the anticipations of the publishers, so it will be necessary for any of our readers who require copies to send in their orders at once.

The Central Telegraph Office, London.

ON July the 10th, the most distinguished visitor to look over our office was the Maori King. His Sublime Majesty seemed to enjoy himself immensely. He smiled and chuckled prodigiously, whether at the instruments or the workers thereat has not been quite decided.

CAN any one answer the following conundrums?—"What will the department do with their superfluous staff this winter? Who yells the longest and the loudest—A jubilant bookmaker when he skins the lamb, a costermonger on a Saturday night, or a telegraphist at the news wires on a busy afternoon?"

WHEN the sixpenny rate comes in, it will cause a vast increase in the metropolitan work on a Sunday, and a necessary increase of staff on that day. Perhaps by that time the department will adopt some measures to provide the staff with a suitable dinner, and not confine them as at present to the tender (?) mercy of a steak which calls to mind the Old Gentleman who supplies the cooks. It's bad enough to be like tramway conductors, compositors, and other strange beings, and have to work on Sunday, but it becomes absolutely horrifying and heartbreaking when you can't have a decent dinner.

THERE are plenty of fallacious ideas that often take deep root in the minds of our "heads." Amongst other incomprehensible notions is the one that only a few are fit and proper telegraphists by virtue of their brilliant achievements to participate in the advantage of being sent out to special events, such as racing, cricketing, speechifying, &c. It is a crying shame that, in an office where the privileges are like angels' visits, the chief one should be confined to a favoured few—favoured by luck, or through indifference of those who have the picking of the names, or through the exercise of continual partiality. A bright idea exists, or they say it exists, "that you must be used to racing work." Can anything be more utterly absurd than this? Racing is as easy as any other work. Any man who understands Wheatstone working, and is a fair puncher, is fit to attend any special event. The work he has to do is very simple. It is punching from copy or writing from slip. A telegraphist at the news wires on day or night duty has work of a far more intricate character and requires a deal more intelligence than the work at "Ascot," &c. Surely some fairness and judgment might be brought to bear upon the selections for these privileges. "*Comparisons are odorous*," we know from Mrs. Malaprop; but there are scores of good telegraphists who have been incessantly overlooked in this matter, telegraphists who will compare with the chosen clique in manipulation or intelligence. Possibly the secret of the shelving of the majority may be accounted for by the minority being apt pupils of Sir Pertinax Macsycophant. The men who hold the position which entitles them to select telegraphists ought to be above favouritism, and with sufficient interest in the welfare of those beneath them to dispense favours, not to a few, but to the many, when practicable.

Provincial Items.

CARDIFF.

AN attempt is being made at this office to form a co-operative society for the purchase and sale of fish and provisions to members of the amalgamated staff, at a little over cost price, and we should be glad if a similar society at any other office would favour us with a copy of their rules, or with any hints or information on the subject which would be of service to us in floating the affair.

Whilst thanking our *confrères* at Edinburgh, NT, and other centres for reports of meetings and press opinions on the subject of "Sunday pay," we would assure them that "CF" is ready and willing at any moment to assert their rights; and seeing that we have justice on our side, backed up by public opinion, a "pull altogether," and that at once, will surely not fail to secure for us what our metropolitan colleagues already enjoy.

CRICKET.—A cricket team from this office met the S X team at Bridgend on Saturday, July 5th, for a friendly match, and, although the C F team was "not in it" with their opponents, the outing was thoroughly enjoyed. The long drive of about twenty miles was very pleasant, and the weather was all that could be desired. S X men played exceedingly well, Mr. T. H. Davies scoring 33, and the bowling by Messrs. M. Jenkins and Cronin was very destructive. I cannot compliment our own team on their play on this occasion, but, considering the hot weather and the scarcity of "coffee taverns" *en route*, they might be excused for such bad form. Stumps were drawn at seven o'clock, and the whole company sat down to a well-served dinner at the York Hotel, after which, Mr. H. Baker, of C F, being voted to the chair, and Mr. M. Jenkins, of S X to the vice-chair, the usual toasts were disposed of, and some excellent songs were rendered by Messrs. Ward, Harrison, and Richards, of Swansea, and Messrs. Baxter, A. Davies, Parsloe, and S. Jones, of Cardiff, and a recitation, entitled "One of the Lowest," by the Chairman, closed the most enjoyable outing of the season.

DERBY.

MIDLAND RAILWAY TELEGRAPHS.—On Saturday, June 28, the annual trip of this department was run to London. The weather throughout the day was exceedingly fine and warm, the heat, if anything, being rather a drawback to the day's enjoyment than otherwise. Notwithstanding this, however, the day's outing was thoroughly enjoyed by those who were able to partake of it. The Health Exhibition was a source of great attraction and pleasure to a large proportion of the visitors, who appeared highly gratified by the numerous exhibits gathered together in the extensive buildings of South Kensington, the fine music discoursed by the bands in the gardens being an especial attraction to them. The Houses of Parliament, Westminster Abbey, the Tower, the Zoo, and other sights of London, came in for a fair share of inspection by the excursionists. The only cause for regret is that, owing to the time of departure being fixed for 9.50 p.m., the visitors were unable to wind up this otherwise most pleasant day's visit to the metropolis by a visit to one of the theatres, or other places of amusement, in the evening.

DURHAM.

THE "Practical Telegraphist" is highly approved of. Without offence, the majority of the railway telegraphists know nothing more than the sending or receiving of a message and the fixing of an earth wire. To those the "Practical Telegraphist" is simply invaluable. It is, generally speaking, free from technical jargon, and is encouraging and entertaining, while it forms a grand stepping-stone to the higher works. In the "Directory" we came across a few names that brought the familiar faces of those far away very near, and we went through the list again and again, and tried to fancy they were still with us, as young men, "the very devil's own." A whole forest of faces then associated themselves to our mind, and we were sorry there were not more names from NT, SU, DL, and SN. A friend suggests that another appeal be made for names, and the "Directory" be issued, in paper back, at, say 3d. or 6d.; but, dear me, telegraphists are not sufficiently enthusiastic, either as an important class or as citizens.

EDINBURGH.

ELECTRIC SHOOTING CLUB.—The third competition for the season took place in Hunter's Bog on July 1. The following are the principal scores:—Mr. Slater, 58; Mr. Irvine, 52; Mr. W. Smith, 50; and Mr. J. C. Robertson, 49.

GLASGOW.

APPOINTMENT.—Mr. William Fulton has been appointed to the first class in room of Mr. John Pollock, superannuated.

OUR old friend, Mr. John Pollock, having bid farewell to "Key Thumping," has invested part of his capital in rigging out a first-class shop near to the Candlish Memorial Church, Cathcart-road, where he has commenced business as a tobacconist. The smoking-room is nicely fitted up, airy, well-ventilated, and altogether comfortable. Those who would enjoy a good weed could not do better than give the veteran a call.

ROUNDERS.—This once popular game is rapidly coming to the front again in Glasgow, inasmuch as that the operators here have started a club with a membership of over fifty. Practice takes place in Kelvingrove Park several nights in the week, with a view to match playing at a future time. Much amusement is afforded the onlookers by the futile attempts of the unsuccessful strikers in their effort to elude the "Greaser."

LIVERPOOL.

TELEGRAPHISTS' CRICKET CLUB.—(Contributed).—This club, which has now 80 members on its books, has been warmly supported this year, and is at present proving very successful. Since their pleasant outing to Belle Vue, the Liverpool team have played three matches, and of these two were won, and the other unfortunately put a stop to by rain. Whamond (who will be well-known to all who witnessed the MR matches some few years back) is bowling grandly, and in the match of Saturday, July 12, obtained seven wickets at a cost of fifteen runs; and this performance was eclipsed a fortnight before by Downard, who took eight wickets for seven runs, and thus added to the reputation he obtained by the Manchester encounter. Some very good batting was also shown in Saturday's match, the principal scorers being Mulligan, 30; Merchant, 11; and D. Owens, 13, not out. I hear our secretary will be glad to arrange matches next season with any Telegraphists' club within forty or fifty miles. Preparations are now being made to ensure our Manchester friends a very pleasant game when they come down in August; and if a little more batting talent is included in their team, a real good set to may be anticipated.

MANCHESTER.

WE are glad to say the linemen, &c., in the engineer's branch, Manchester, are forming a cricket club amongst themselves. This is a most healthy, amusing, and innocent recreation, and speaks well for the good sense of the men; and if they only prove as skilful with the bat as they are with the soldering-iron, their success may be considered certain. In both cases they stand a good chance of getting their fingers warmed!

Since writing the foregoing, the members of the newly-formed club have measured their strength against the talent of the commercial staff, the latter scoring 94 to the Engineers' 17. I have heard that one of the spectators dryly remarked—the Engineers would have done better had they used their spades and pinnars instead of bats and wickets. However that may be, the bowling of Burton and J. E. Evans proved much too effective for any grand display with the bat. The return match will be played shortly, and no doubt on that occasion the Engineers will put their best team in the field.

PORTSMOUTH.

It may interest your readers to learn that the first press message, or newspaper report sent by wire, was despatched from Gosport, and appeared in the *Morning Chronicle* of May 8, 1845, detailing the proceedings at a railway meeting held at Portsmouth the preceding day. At that time the electric telegraph had not been introduced into Portsmouth.

PORTSMOUTH POSTAL AND TELEGRAPH EMPLOYEES SICK BENEFIT SOCIETY.—At a meeting held here last month, this Society was effectually inaugurated, and rules were adopted similar to those already governing the Northampton and other clubs. About forty members were enrolled at the meeting; the numbers have now increased, however, to over sixty, and it is anticipated that many more will be prevailed upon to enter. Messrs. Farrell (Telegraph), Eagleman (Indoor-Postal), and R. Male (Outdoor-Postal), were elected as a Committee, and Mr. G. Blackmore, as Hon. Secretary and Treasurer, whilst Messrs. H. Hardy, sen. (Tel.), and J. Hennen (Postal), consented to act as Trustees. We shall now be pleased to assist any other town in the formation of kindred clubs.

SWIMMING.—Shortly before midnight on July 5, two of our staff, Messrs. H. Hardy, jun., and J. F. Howlett essayed to cool their heated brows by swimming across the harbour to Gosport, a distance of about a mile straight, but considerably more when the tide runs strong, as it did then. They succeeded in accomplishing

the feat in seventeen minutes, which is very fair work. They were accompanied by a boat-load of their fellow craftsmen. H. Hardy is a member of the "Psychrolutean Society" of winter bathers.

TELEPHONY.—The whole of the different departments and offices of the dockyard, numbering upwards of forty, will shortly be in telephonic communication with each other, when it is believed that the saving of time and stationery will be considerable.

SHEFFIELD.

THINGS have been quite lively with us in the matrimonial line lately, no less than three of the staff having given up their state of single blessedness for the "joys (?) of a married station."

OUR annual trip to Burton-on-Trent was made on July 12, when, on the ground of Messrs. Bass & Co., which was kindly lent for the occasion, the usual cricket match was played against the BM team. Messrs. A. Oates (26) and Wheatcroft (20) for SF, and F. Ward (16) for BM, played well for their runs. SF won easily by 20 runs. After the match an adjournment was made to the Star Hotel, and the evening was spent in the usual convivial manner.

MARRIAGES.—June 15, at Pitsmoor Church, Mr. J. Oates to Miss C. Keeling; June 17, at Grassmoor, Chesterfield, Mr. A. Wilson to Miss E. Goacher; July 16, at Rotherham Parish Church, Mr. C. R. Morton to Miss M. E. Carr.

BIRTH.—The wife of Mr. A. J. Baths, of a son.

SUNDERLAND.

On Wednesday evening, July 10, a service of song, entitled "Poor Mike," was given in the Providence Chapel, by the Postal Telegraph Messengers, with connective readings by the Rev. H. Smith.

Cable Companies.

CRICKET.—A match was played at Valentia, on July 4, between the Valentia and the D. U. S. Cricket Clubs, and resulted in a victory for the Direct by four wickets and two runs. The Valentia Club is composed of members of the Anglo staff and residents of the village of Knightstown. Scores:—

VALENTIA C. C.

1st Innings.		2nd Innings.	
O'Driscoll, A., run out	0	b Smith	1
O'Donoghue, T., run out	8	run out	11
Shanahan, M., b O'Leary	12	c Cuthbert, b O'Leary	4
O'Sullivan, D. (Capt.), b Daly ..	7	c and b Smith	3
O'Sullivan, P., b O'Leary	5	c Smith, b O'Leary	8
Rice, c Armstrong, b O'Leary	18	c Armstrong, b O'Leary	0
O'Sullivan, J., b O'Leary	0	b Smith	0
O'Driscoll, T., b O'Leary	7	b O'Leary	1
Ring, J., c Daly, b O'Leary	3	c Armstrong, b O'Leary	2
Sell, A., c Cuthbert, b Smith	0	c Watt, b Smith	0
Kirwan, J., not out	3	not out	1
Extras	6	Extras	3
Total	69	Total	34

D. U. S. CABLE C. C.

Harty, J., b Shanahan	0	b Shanahan	10
Cuthbert, D., b Shanahan	2	not out	7
O'Leary, J., b Shanahan	3	c Shanahan, b D. O'Sullivan ..	3
Watt, J., b A. O'Driscoll	2	c Shanahan, b D. O'Sullivan ..	3
O'Sullivan, P., run out	8	b D. O'Sullivan	11
Smith, W., c Shanahan, b A. O'Driscoll ..	1	c Shanahan, b O'Sullivan	11
Daly, J., b Shanahan	1	c and b D. O'Sullivan	0
Armstrong, J. G. (Capt.), run out	8	not out	5
Harms, J., c O'Donoghue, b Shanahan ..	7		
Lupton, W., c Shanahan, b D. O'Sullivan	0		
Harty, R., not out	0		
Extras	14	Extras	9
Total	46	Total	59

COMMERCIAL CABLE COMPANY.—The steamer *Faraday* arrived at Waterville on June 26, for the purpose of laying the shore ends of this Company's cables. After paying-out 150 miles of each cable, the ship returned to Queenstown for coal, and about July 7 spliced one of the buoyed ends and steamed towards the buoyed end of the

800 miles laid eastward from Dover Bay. The company have secured a large house at Waterville for offices and single quarters.

THE BENNETT MACKAY CABLES.—The London address of the Commercial Cable Company is 23, Royal Exchange, E.C.

Electrical Tid-Bits.

A SINGULAR COINCIDENCE.—It is a singular coincidence, whether significant of the future of the enterprise or not, remarks the *Boston Herald*, that the first successful step in the Bennett-Mackay, or Commercial Cable, enterprise comes on the anniversary of the first practical demonstration of the possibility of the electric telegraph. It is just forty-one years ago to-day that Professor Morse accomplished the aim of his life in having constructed or completed the first working telegraph line in America, between Baltimore and Washington. The trials and tribulations of that noble pioneer inventor and telegrapher of 1843, in building a simple land line of forty miles, stands out in marked contrast with the system and ease with which even two great continents are now joined by the electrical devices of such ingenious and persevering sons of Massachusetts as Professor Morse, of Charlestown, and Cyrus W. Field, of Stockbridge. Telegraphs and ocean cables might have come if these men had never been born, but it cannot be denied that but for the indomitable energy of these Yankees their realisation would have been long delayed.

THE TELEGRAPH IN MEXICO.—The fastest message ever sent over the Mexican Company's cable between Vera Cruz and Galveston was sent on night of May 23, when 197 words were sent and received in 8 minutes, making an average of 251 words per minute. C. H. Baker, formerly Sup. of Eastern Co. at Alexandria, was the sender and Mr. C. Orchard the receiver.

THE CHAT WITH CALCUTTA.—Wonderful as this feat appears to our London contemporary, there is, according to the projectors of the Hathaway Printing, Telegraph, and Telephone Company, of this city, a still greater one in store for him when that remarkable invention comes into play. By means of the Hathaway instrument, they are confident that, before long, a man of business in New York or London may talk with his correspondent in Calcutta, or anywhere else in the remote world, without calling in the science of a skilled operator, and without the use of any other than the everyday alphabet which children learn with the first words they lip.—*Electrical Era* (Philadelphia).

A FLASH OF LIGHTNING.—Professor Tait, of Edinburgh, insists that when people think they see a lightning flash go upward or downward they must be mistaken. The duration of a lightning flash is less than the millionth part of a second, and the eye cannot possibly follow movements of such extraordinary rapidity. The origin of the mistake seems, he says, to be a subjective one, viz., that the central parts of the retina are more sensitive by practice than the rest; and, therefore, that the portion of the flash which is seen directly affects the brain sooner than the rest. Hence a spectator looking towards either end of the flash very naturally fancies that end to be its starting point.

Correspondence.

To the Editor of the TELEGRAPHIST.

HOLIDAY EXCHANGE.

Llanbyddwllfairgwentllin, North Wales.

DEAR SIR,—I observed with pleasure in last month's TELEGRAPHIST the suggestions of your "TS." correspondent regarding holiday exchanges. Do you not think that duty exchanges for a time might also be arranged in the same way? The Department would, I should think, allow it now and then. A complete change of scene might thus be obtained, and would be so pleasant to many. I, for one, would be delighted to give any clerk or clerkess who desires it, the advantage of a few weeks' residence and light duty here in my mountain home; and I feel sure that the "worn out" gentleman would be one of the first to snatch at such an opportunity.

Let me try to give any aspiring friends an idea of life at Llanbyddwllfairgwentllin. The post-office is a picturesque building, once whitewashed *écru*, though the smoke of years from the adjacent tin works has somewhat obscured the colour.

The hours of duty in this rural retreat are particularly light, being only from 8 a.m. till the same hour in the evening. But there is only one assistant for postal and telegraph work, so it will be my friend's privilege to rise at 4 o'clock every morning

to get up the mails. And as early-rising is one-half of the well-known and infallible prescription for amassing affluence, health, and wisdom, no sane person would question for a moment the advantage of this arrangement, which, I may remark, is particularly agreeable in the winter season, the village being situated on a mountain-side, and having an easterly aspect.

The telegraph work at Llanbyddwllfairgwentllin is, I must admit, heavy, the number of messages comprising an average of about five daily. These are mostly "received," and our friend will have the felicity of himself delivering them, the sub-postmaster being, in theory, an ardent admirer of pedestrianism, and therefore believing thoroughly in the benefit of that exercise to his assistant, while his philanthropy receives stimulus from the remembrance of the porterage fees which accrue. The Lime Works, to which most of the messages are addressed, are not more than four miles distant, and as the way thereto leads along an arid mountain-path, destitute of all shelter, the rays of the summer sun strike refreshingly on the perspiring brow of the traveller, or the winter winds, and snows, and rain chill the marrow of his bones in a most pleasing manner. I must here admit that both rain and snow here are invariably wet. But this meteorological phenomenon has been for some time past engaging the undivided attention of an eminent scientist, and will, I doubt not, soon be satisfactorily accounted for, if not, indeed, overcome.

The winds at Llanbyddwllfairgwentllin, blowing often from the east, the advantage to a delicate constitution of several daily walks such as I have described, are, of course, apparent. Then the little pleasantries with which the sub-postmaster will greet you on your return are in themselves a reward. Such as, "How walking does agree with you!" "You get fatter every day!" I have myself been treated to this little *jeu d'esprit* constantly of late, though it is but fair to say that I am gradually attaining to the proportions of that distinguished living skeleton, Robert Tipney.

The facetious functionary whose sanguine assurances are so calculated to improve the spirits of his, at times, somewhat jaded assistant has himself a weakness for the liquid referred to by "Dick Swiveller" as the "modest quencher." He is, in fact, often incapacitated in consequence for his official duties, but at these times of extra work, he will frequently enliven you by singing the "Village Blacksmith" in clear but indistinct tones to the tune of "Sweet Spirit hear my Prayer."

With such resources for one's time as I have mentioned, who could find Llanbyddwllfairgwentllin dull? But to lovers of dissipation, nothing could be more agreeable than a visit (after 8 p.m.) to the "Royal" Waxwork Show which often enlivens the village, or to the "halls of light," thrown open occasionally for amateur theatricals, where Shakespeare's plays are performed with pleasing originality and sublime disregard to aught resembling accuracy, where Richard III. appears in the costume of a Chinese tea-merchant, and his utterances gather additional impressiveness from the strong Welsh accent and dilapidated pronunciation of the local Irving.

In comparison with these places of amusement, Madame Tussaud's pales into insignificance, and Henry Irving shines as with a borrowed light.

I know that the readers of the TELEGRAPHIST, if they see this feeble but reliable description of my native village, are already longing to communicate with me, so I forbear to dwell further on its advantages, except to add that the county asylum is within easy distance.

Further information may be obtained at the above address from P.S.—Don't all speak at once. E.F.F.L.

A CHAT WITH CALCUTTA.

SIR,—By a "direct writer" is meant an instrument which is worked directly by the line current, and not with a relay; such being the case, "Molecular Vibration" is labouring under a mistake. Not only is there a relay at L.Y., but at every translating station on our line. From here on THN (I.) direct, a distance of 1,150 wersts, we work at our highest speed with a battery of 100 cells on the double current system; but to think that Ldn could work to Calcutta without translation is indeed absurd.

As regards the "little book," I have not seen it; but, as far as I am aware, not even an attempt has been made to speak with THN by telephone from L.Y. Every station would have to clear out of the main line (No. I.), and the consequent loss of insulation on a direct circuit of 3,800 miles would render such an undertaking impossible. On Sunday evenings, when we are clear, we have spoken on No. II. to Tauris, Persia, distance of 571 wersts; but immediately working begins on No. I. the hissing sound, caused by induction, renders it impossible to distinguish a single word. Wishing the TELEGRAPHIST every success.—Yours, &c., HYOSTAN.

Tiflis, June 14, 1884.

OCEAN TELEGRAPHY.

SIR,—In these days when ocean cables have been designed, manufactured, paid for, laid, and their working brought to a state of approximate perfection by English capitalists, English engineers, English electricians, and English telegraphists, how is it that the TELEGRAPHIST, an English journal, has to go to our American pupils who have but recently entered the "ocean" school to borrow from them an explanation of how the ocean cables are worked, for the purpose of instructing the rising generation of English telegraphists in that field of knowledge?

Is there no one in our own—the mother country—to be found who can undertake this task, and give accurate information in a popular form; and thus avoid the almost inevitable blunders which generally creep into explanations of such subjects when dealt with by ordinary journalists and would-be teachers?

Even the latest literary production on electrical science—"Munro and Jamieson's Pocket-Book" contains, on page 311, an error of vital importance in relation to ocean duplex telegraphy, which renders the system (as there given) impracticable, and therefore tends to mislead the uninitiated. OLD ELECTRIC.

[We shall be very pleased to discontinue the American articles if "Old Electric," or any other submarine engineer, will send us some popular papers on ocean telegraphy.—ED. TEL.]

CABLE SERVICE AND POSTAL TELEGRAPHS.

SIR,—There appears to be a feeling prevalent in some parts of Britain that to secure an appointment in a cable company is to make the first step on the ladder which, in a few years, will lead to fortune. Some have joined with this idea; but have been grievously disappointed. At a time such as this, when there will be a demand for operators from several companies, perhaps a word of advice to the younger brethren may not be out of place. In some cable companies first-class operators are promoted rapidly, and, as the lowest increase given is £1 per month, a few such additions soon brings the original salary of £6 per month to a respectable income. I know of many cases in which young men receiving about 25s. per week in the post-office have left and risen to 50s. per week in less time than they would have taken to reach 30s. by the 1s. 6d. increment system; but those are, undoubtedly, first-rate men. Others, who joined the various companies about the same time, have not gained much (and are not likely to) by the change, and, no doubt, often long to be back in their old offices. There are, also, hundreds in the tropics who are anxious to get home on much smaller salaries than they at present receive. If you desire an entire change of work, and consider yourself equal to perform anything you may be called upon to do, risk it; but if you want to be free from all care and suspense as to your next promotion, remain in the Government service, where you are always sure of your annual increment. Some cable companies insure their clerks' lives for from £200 to £600, payable at death, or on attaining the age of fifty, and pay half of the premium; but postal telegraph clerks can look forward to receiving from a grateful country a sixtieth of their salary for every year's service. Consider well before breaking your connection with the easy going postal telegraph service, where you are well treated, and where "peculiar" superintendents have no power to impose upon you.—Yours, &c., CONDENSER.

QUERIES.—Will anyone vouchsafe a reason why vacancies for surveyors' clerkships are confined to men of not more than five years service? Are there not plenty of men of ten or even fifteen years service who would be glad of the appointment?—JUSTICE.

Mr. Frank Waller, Townfield, Hurstpierpoint, Sussex, would like to know where he could obtain cheaply a good, second-hand Single Needle instrument in order to keep up his practice.

ANSWERS TO QUERIES.—No one seems to have answered "C. B.'s" query in your June number, possibly from its peculiar wording. He asks, "It is required that B shall send to A while C receives from A, and vice versa, that is, that C shall send to A, while B receives from A. How would you do it?" Does "C. B." mean can it be done, or is he expounding a puzzle? However, I think if a quadruplex be fixed at "A," and another at "B," with its B side extended to "C," it would meet his case exactly.—F. E. B.

OBITUARY.—We have to record the demise of John Pollock, which took place at the residence of his brother-in-law, Cathcart-road, Glasgow, on the 21st ult. Deceased was one of the few remaining magnetic clerks, and only recently retired on a pension. Although in a delicate state of health for some time, his end was rather sudden. Much sympathy is felt for his sorrowing relatives.

The Telegraphist

A MONTHLY JOURNAL OF

POPULAR ELECTRICAL SCIENCE.

Speed the soft intercourse from soul to soul,
And waft a sigh from Indus to the Pole.—*Pope*.

LONDON: MONDAY, SEPTEMBER 1, 1884.

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OCEAN TELEGRAPHY.

II.

WE will now turn our attention to the method by which the needle instruments are worked. You will by this time have become sufficiently convinced that the movement of a handle to the one side gives a right-hand signal, and a movement to the opposite side a left-hand one. Can you tell me why?—perhaps you can't. Let us go down into the cellars, or battery-room, and see where the power to move the needles is generated. Here we see long rows of jars or troughs, as the case may be, ranged side by side, and tier upon tier, to the number of several thousands. Of course, I speak of a large central station; but, not to confuse you, I will take you to a smaller station, and imagine only one instrument, and that one a single needle, with but two or three dozen jars or cells containing copper and zinc, or carbon and zinc plates in a liquid. The chemical action which takes place upon joining the ends of this series of cells together, in a closed circuit, can be learned from any text-book and several journals; in fact, No. 1 of the TELEGRAPHIST tells you sufficient upon this point for your present purpose, and No. 2 tells you further how the current of electricity thus generated in the battery deflects the needle from side to side; so I would advise you to read those papers carefully at your leisure, and thoroughly master their contents. This will enable us to travel much quicker on the next stage of our journey, and avoid recapitulation.

I will, therefore, now assume that you know that a positive current sent in a given direction through a coil of wire surrounding a magnetised needle freely suspended parallel to the wire, will deflect that needle in one direction, and that a negative current will deflect it in a contrary direction; and not only that it does so, but that you further know the reason why.

In double-needle, single-needle, detectors, tell-tale galvanometers, and all such-like instruments, where the needle is vertical, and pivoted horizontally, the magnetised needle in this northern hemisphere is always placed with its north pole downwards. Should a flash of lightning demagnetise the needle, or reverse its magnetism, as it will frequently do during thunderstorms, it must be very carefully remagnetised, and replaced properly, for who can tell how much may depend upon this apparently simple process. If your instrument is merely used for speaking purposes, you will, of course, at once see whether you have magnetised the needle right or not, as, if wrongly done, all the signals will be reversed—those which should go to the right will go to the left, and *vice versa*. You will, of course, take immediate steps to remedy this before you will be able to work again. But suppose it to happen to a railway instrument which regulates the traffic of a busy line, and that the needle should point say “left” for a train on line, and “right” for line clear, and the needle's magnetism be reversed, what happens? Why, these signals would be reversed, and a train may be sent on a line to meet another on the same metals, and who shall tell the result?

If the current circulating through the coil of wire round the magnetised needle were strong enough, and there were nothing to impede it, the needle would be deflected from the perpendicular to the horizontal position and held there as long as the current was continued—that is, it would be deflected through an arc of 90 deg., east or west, as the current was positive or negative; but the rapidity with which it is necessary to send the signals, in order to

attain a useful speed, renders it compulsory to limit the “play,” or amplification of the deflectors, to a very small arc of the circle; and to effect this two little ivory pins are placed, one on each side of each needle, or pointer, at the upper end, against which the needles strike, giving out a clear, though not very loud, “click.”

Hence, the poetic contributor to (I believe) “Chambers's Papers for the People,” over thirty years ago, wrote as follows:—

“Hark! the warning needles click,
Hither, thither, clear and quick;
Swinging lightly too and fro—
Tidings from afar they show.
While the patient watcher reads,
As the rapid movement leads,
He who guides their speaking play
Stands some hundred miles away.
Sing who will of Orphean lyre,
Ours the wonder-working wire!”

Eloquent, though all unheard,
Swiftly speeds the secret word;
Light or dark, or foul or fair,
Still a message prompt to bear:
None can read it on its way,
None its unseen transit stay;
Now it comes in sentence brief,
Now it tells of loss or grief;
Now of sorrow, now of mirth,
Now a wedding, now a birth;
Now of cunning, now of crime,
Now of trade in wane or prime;
Now of safe or sunken ships,
Now the murderer outstrips.
Now it warns of failing breath,
Strikes or stays the stroke of death.
Sing who will of Orphean lyre,
Ours the wonder-working wire!

Now what stirring news it brings—
Plots of Emperors and Kings;
Or of people grown to strength,
Rising from their knees at length;
Those, to win a state, or school,
Those for flight, or stronger rule.
All that nations dare or feel,
All that serves the commonweal;
All that tells of Government,
On the wondrous impulse sent;
Mark how bold invention's flight,
Makes the widest realms unite.
It can fetters break or bind,
Foster or betray the mind,
Urge to war, incite to peace,
Toil impel, or bid it cease.
Sing who will of Orphean lyre,
Ours the wonder-working wire!

Speak the word, or think the thought,
Quick 'tis as with lightning caught,
Over land, or under seas,
To the far antipodes.
Now o'er cities throng'd with men,
Forest now, or lonely glen;
Now where busy commerce broods,
Now in wildest solitudes:
Now where Christian temples stand,
Now afar in Pagan land.
Here again as soon as gone,
Making all the earth as one.
Moscow speaks, at twelve o'clock,
London reads 'ere noon the shock.
Seems it not a feat sublime,
Intellect has conquer'd Time!
Sing who will of Orphean lyre,
Ours the wonder-working wire!!”

The double-needle and the single needle instruments are both worked upon the same electrical principles, the only difference being that the former requires two wires and two dials, while the latter requires but one wire and one dial.

The chemical printing instrument on Bain's principle was soon found too inconvenient, owing to the necessity of preparing the paper before it could be used for recording the signals, especially where a great many of these printing circuits were worked from the same station. Each morning a collection was made of empty

"blocks" i.e., small guttapercha centres for the rolls of paper to be wound upon, after being drawn through the chemical solution, and sometimes, in the quiet of the evening, one heard on the double-needle instrument, peculiarly attractive sounds emanating from the needles striking the little ivory pins, and upon listening attentively the sounds were found to correspond with the tune of "Pop goes the Weasel," clicked out most distinctly by some brother wire-puller for his own amusement. Anyone who was anxious to know whether there was really anything intelligible in the signals so heard, beyond the mere accent of the tune just mentioned, would have found, upon close examination, that the words used were simply these—"What is Rudd at? Gathering blocks."—Now Mr. Rudd was the patient young man who had to gather these blocks daily and fill them again with prepared paper ready for the use of the printing instrument clerks.

This chemical arrangement gave way to the "Embossing Morse," which, by means of a steel point or style fixed to the end of the armature of the electro-magnet, embossed the paper from underneath, striking it into a grooved wheel, and thereby raising the dots and dashes in relief, similar to the letters stamped in books for the use of the blind. The marks and the paper being both white, rendered the reading of the signals exceedingly trying to the eyes, especially when the direction of the light falling on the paper was unsuitable for throwing a faint shadow from the raised marks which was necessary to assist in their decipherment. But this embossing system had to give way before the improved "Inkwriter," which marks the letters on the paper by means of an ink-wheel instead of a steel style, and thus greatly facilitates their transcription.

You have, no doubt, heard of the bookbinder's assistant who turned philosopher, and became one of the most eminent and successful experimentalists in electrical science—Michael Faraday by name—whose discoveries in electro-magnetism, Volta-electric induction, and magneto-electricity, admit of such a legion of applications that their end is by no means yet reached.

Like many other things, a great many people have combined each in their own way to produce useful inventions and applications of natural laws; and thus it is that a host of names should be mentioned in connection with the gradual development of practical electric telegraphy—a few leading ones must, however, suffice for our purpose—viz., Galvani, Volta, Arago, Oersted, Ampère, Steinheil, Faraday, Morse, Cooke, Wheatstone, Clark, Varley, Bright, Preece, and many others.

The discovery that a coil of wire encircling a piece of soft iron imparts, by means of induction, to that soft iron the properties of a permanent magnet as long as the current of electricity passes through it, renders it capable of being applied to an endless variety of purposes, and forms the basis and principle upon which a vast number of telegraphic instruments are made, and in the Morse system—whether embosser, inkwriter, or sounder—and also in the various electric bells, we have this principle applied.

The speed with which the soft iron core of an electro magnet can be magnetised and demagnetised is truly marvellous, so rapid is it that musical notes can be produced by it. Now it is well established how many vibrations it is necessary to create per second in order to produce any given note upon the musical staff, and by comparing the notes of a musical instrument with the notes produced by the action of an electro magnet imparting vibrations some approximation to this rapid action can be estimated.

Assuming the middle A of a piano, or the A string of a violin to be produced by 435 complete vibrations per second, in the tempered gamut of absolute pitch, as adopted by the Paris Conservatoire, the highest note, A of the piano, would be produced by 3,480 vibrations per second; but a note two octaves higher than this has been produced by electro magnetic vibrations, representing, therefore, 13,920 magnetisations and demagnetisations per second.

It will be thus seen how powerful an agent we have at our command for rapid signalling, and that no automatic machinery for telegraphic purposes is ever likely to reach its utmost limit, much less can any telegraphist ever hope to do so by manual keying upon lines not subject to any great amount of inductive retardation.

When the electro-magnet is required to attract a soft-iron armature, as in Morse instruments, single current relays, sounders, electric bells, &c., it matters not whether the currents used be positive or negative; the reversal of the current through the coils will reverse the north and south poles of the electro-magnet, but in either case the armature will be equally attracted. When, however, a magnetised bar or armature has to be acted upon by the electro-magnet, it will be attracted by one current and repelled by the other. The current being sent in one direction, makes the poles of the soft-iron N—S, but, being reversed, they change their names and become S—N. Now, since "like poles repel and unlike poles attract" each other, a magnetised armature, if presented to the soft-iron core in the former case thus S—N, it will be attracted;

but in the latter case it would be repelled. That "like poles repel and unlike poles attract" you can easily prove for yourself by getting a small permanent magnet from any cutler's shop, and, having magnetised a sewing needle by rubbing it upon the magnet, suspend it by a fine silk thread, so that it will hang horizontally. You will find one pole of the magnet will attract the one end of the needle, but repel the other; the contrary pole of the magnet will attract the latter, and repel the former. If you want to determine beforehand which end of the sewing-needle shall point to the north after it has been magnetised, you must be careful to use the proper poles of the magnet during the operation. Thus, suppose you want the point of the needle to indicate the north, and the eye of the needle to indicate the south direction after magnetisation, you must be careful to rub the point of the needle on the south (or unmarked) end, or pole, of the magnet, and the eye of the needle on the north (or marked) end, or pole, of the magnet. If the magnet be properly marked, the result will be as you desired; if it should prove the reverse, while you are satisfied that you have gone through the programme carefully and correctly, it is a plain proof that the magnet has not been properly marked, but that the south end has been marked instead of the north, as is customary in this country. I have seen magnets marked wrongly, and, therefore, I give you this caution.

Polarised relays contain a permanent magnet, and, consequently, for the reasons already given, unless the current is arranged to enter the coil of wire and circulate in the proper direction, the armature will be repelled by the "marking" and attracted by the "spacing" current on to the local circuit contact pin in double current working, and the result will be that the "spaces" will be recorded, and the marks form "spaces." Of course, the remedy then is to reverse the direction of the current through the coils of the relay, when the marks will be recorded and the spaces appear where they should be. The same effect would be produced by leaving the relay as it was and reversing the battery wires at the sending-key; but most probably the sender would object to do that, the fault being at your own end, and it being therefore your own duty to put it right.

I think, my young friends, you have now a pretty general idea of the inside of a telegraph station where are to be found the Double-needle, Single-needle, and Morse instruments, but as yet we have not looked outside the office to see how the apparatus at one station is joined to that at the distant one; but I must admit that my experience goes to show that, as a rule, very few clerks ever did or ever do trouble themselves to give a thought to the subject except when they find things going wrong, and then the first thing is too often the jumped-at conclusion "Men working on the line." It is the same with regard to their instruments; if anything goes wrong with them, *somebody* is expected to come from *somewhere* to do something to put them right, while they sit and look at them perfectly helpless, whereas the turn of a screw, the cleaning of a contact, the removal of a speck of dirt or dust, the tightening of a loose connection, or, it may be, the putting on the terminal a wire which had slipped off it altogether, is all that is required to set things going well again, but the poor, helpless, disinterested clerk, who sat like an automaton upon his stool, couldn't see it or didn't understand it, and therefore didn't do it. What would such a specimen of a telegraphist do if sent away to a distant station alone, without a soul, not even a poor illiterate lineman, to give him a hint as to cause and effect? While such a large percentage of telegraphists throughout the service forms this class of operator, is it surprising that so few rise from the lower spheres to shine as stars of the larger magnitudes in the electrical firmament?

Where are those "Old Electrics" now, who in their earlier years were not content to pin themselves to their stools, but devoted a portion of their time to studying the "why and because" of this, that, and the other in connection with their business? Where, I ask, are they now? Still on their stools? No; but scattered throughout every quarter of the globe, holding responsible and honourable positions, being men "under authority," yet having authority in the various companies which, one by one, have stretched their lines over all the world by means of "Ocean Telegraphy"—that goal to which we are journeying. And how, do you ask, were they found out and selected for such posts? I would answer that when a man has brains and talents worth anything more than the average telegraphist they cannot be hid under a bushel, and will, in spite of himself and his surroundings, develop and display themselves most unmistakably to those who have the tact to observe them; and this may be done not only at his own station, but even at a distant one, by his method of working. He must necessarily be found out; and, like the topmost shoot of the pine-tree will sprout out singly above all the older ones beneath it which have been much longer on the tree.

Thus it is that all those of the old school who exhibited a taste for their work in those early days of which I am now writing, have

not failed to fill the best positions in the telegraphic service throughout the world, being fitted therefor by long experience and practical knowledge of every detail of the duties of a messenger, a junior clerk, a senior clerk, a clerk in charge, and ultimately a superintendent of a large station. But those automata, where are they? Vanished from the scene. Some are dead and buried, some are buried in obscurity, or, perchance, some are still on their stools if not too old to work!

How blind to their own interests are those persons who, for a present temporary pleasure, neglect their future permanent good! My dear young friends, you are just entering upon a useful, honourable, and scientific career. Take heed betimes of these words of friendly warning. Waste not *all* your youthful hours of leisure in pleasure or play. *Some* you must use both for mental and physical health. "All work and no play makes Jack a dull boy," says the old proverb, and it is as true now as when it was first uttered; but pray give some portion of your spare time to the study of your business. Learn *how* your instruments are made, trace out *why* they are made so, for what purpose every piece is used, as you may be quite sure the maker did not put one piece there for nothing; why was it put there? what does it do? what effect has it upon other pieces? what would happen if it were removed? what provision is there for starting and stopping the machinery? and why does that simple motion effect its purpose? Can it be made to go quicker or slower, and if so, how? Such questions as these will, if put to yourself seriously and with an earnest desire to know how to answer them, set you thinking, and one thought will suggest another, until you find yourself in possession of every detail without, perhaps, troubling a soul besides yourself for the information; and remember that a thing easily learned is like the magnetism of the core of an electro-magnet—easy come, easy go; quickly learned, quickly forgotten: but if much trouble is taken to learn it becomes more like hardened steel, difficult to saturate with magnetism, but when once done it is retained for an indefinite period.

Self-help is a grand thing, and self-help was a *necessity* with those "Old Electrics" who dared to "jump over the traces." And why? Because those who didn't know couldn't, and those who did know wouldn't impart any information or answer any question. Electrical knowledge was locked up, as it were, in a miser's secret drawer, which was not to be opened except on very rare occasions, and then but very cautiously. As for printed matter upon the subject of electrical science or practical telegraphy, the poor clerk might look in vain. What there was of it was far beyond his ken or pocket. The first innovation into the "trade secrets" of telegraphy was the publication, in 1863, of the first edition of "Culley's Handbook," under the sanction of the Board of the Electric and International Telegraph Company, the "Appendix" to that book having been written by myself, revised by the then Engineer-in-Chief, and ordered to be bound up with the book which was then being printed. Since that date text-books have increased and multiplied exceedingly, and are now within the reach of all.

(To be continued.)

AMERICAN TELEGRAPHS.

SOME years ago, I was in the Postal Telegraph Service in one of the principal cities of England, and I remember how anxious the telegraphists were for such an organ as the *TELEGRAPHIST*; but I regret to see in a recent number that they have not given it that support which it deserves. I believe their failure in this respect rises more from inactivity amongst themselves than from want of appreciation. Those who appreciate it should "push" it. A similar commencement was made on this side years ago; but, by degrees, prosperity came, and now the operators in this country support two organs, besides other electrical papers. Of the former, there are the *Operator* and the *Telegrapher's Advocate*. The first-named, as you know, is an excellent publication, its paper, print, and drawings being *par excellence*. It, however, got itself a little into disfavour in consequence of its open and free expressions during the strike of last year; but still it is prosperous, as is evidenced by the enlargement which has recently taken place. The *Advocate* is an outcome of the strike, and, of course, hotly opposed to its contemporary. Its style is not equal to the other, being too much taken up with the publication of "Duty Lists." It is very interesting to know of transfers, promotions, &c., but it is not very amusing or instructive to plod through huge paragraphs telling us that Bill Smithers is on nights, and "Railway Jim" is on days, "sitting" at the Chicago Quad and "turning out the best copy"; while Ben Jones "grinds lightning" on the Pittsburg Duplex, and is, "by long odds," the Boss Operator. "Jim," of course, is a local celebrity, and, outside of his own little world, may

be the greatest know-nothing in existence, but, through the press, he becomes a celebrity—for the current fortnight. However, the *Advocate* seems to be a success, having kept afloat through its most critical time—the first six months; and, no doubt, it will run on smoothly now. The *Electrical World* is a pattern, and worthy of being followed by similar papers in England. Mr. Johnston, the proprietor, is in England now, and may present a copy of it for the information and instruction of your contemporaries. So much for the papers.

In the *TELEGRAPHIST*, I notice, you have opened your columns for descriptions of "Foreign Telegraphs," and if you think it acceptable to your readers, I gladly offer my share.

AMERICAN OPERATORS.

The title "Telegraphist" is not used here. In England a telegraph clerk is acknowledged as an operator; but here, he is one engaged in a telegraph office, but not in the capacity of an operator.

Adverting to the speed attained by our operators, I must admit that there is no apparent difference between the English and American. The American code, which differs in a few letters only, is faster than the "Continental"—as the English code is designated, but not so safe—and, in difficult cipher business, I believe the English would "take the cake." I have seen some splendid and unsurpassed operating here, but nothing to convince me of a shadow of superiority over the "crack" operators of Leeds, Manchester, or Liverpool, as they were in my postal days.

It would be very interesting to see a match between American and English operators. It would, however, scarcely be necessary to go to the expense of bringing champions across "the big drink," as there are several English operators in the Atlantic Cable service in this country, who would safely represent British skill. Such a contest should not be based upon perfect sending, the measurement of dashes and spaces, &c., but let each pair enter into a "go as-you-please" contest, which would not only determine the superiority of speed, but settle the question of accuracy, practically. Your arbiters in the recent contest in London would not enjoy the measurement of spaces in the American alphabet.

In the newspaper business, abbreviations are not allowed, the same rule applies to all telegraphing here. This would not suit your "Press" men!

The American system of signalling is entirely different to the English. First comes the number of the message and the initials of the sending operator, which are signalled in every message. Then the number of words, followed by the station and date (the latter likewise being signalled every message). Then the address and body, concluding with the signature. Why the date should be signalled when stamps are so cheap is beyond my conception. The sending operator times his message with his left hand while sending, and at the same time adds the initials of the receiving operator. This simplifies matters when errors are under investigation.

"Sending" is called "writing," "receiving" is called "copying." I don't know what copying is called! To "stop" a sender is to "break" him.

Lines containing several stations on one wire are known as "way wires," and on many of these a remarkably high speed is attained.

The salary of a first-class Morse operator is from £15 to £16 per month, while those engaged on the "PHELPS PRINTER" (which will be mentioned hereafter) command £20 to £22, but there are very few "Printer" operators.

The hours of duty are nine per day. Sunday duty is paid for at the rate of seven hours' per day (and I may say, in parenthesis, I consider it a disgrace that the English Government should compel their operators to work on Sunday without pay). Overtime is paid at the same rate. No holidays are granted, except with loss of pay, and the absentee procuring an acceptable substitute. Perhaps the English operator, reading this, will retaliate, and fling my criticism on the Sunday free-work in my face, but I can assure him we should enjoy a holiday on full pay. It is neither our fault nor our ignorance.

In all the large cities there are plenty of "tramps" (operators who roam from one city to another, seldom or never staying anywhere long enough to become one of the permanent staff). These "tramps," if acceptable to the manager of the office, are permitted to act as substitutes for absentees, and are frequently employed as auxiliaries during heavy pressure of business.

Such a system is unknown in England, where an operator cannot tramp about as he chooses, resigning any position or location that becomes distasteful to him, and transferring himself to another point, for which, no doubt, English landladies and tailors are grateful! Absence during sickness is likewise attended by loss of pay.

Ladies are employed in all the large offices, and in numerous

country offices too. They are much quicker than the English lady telegraphists.

The phrases here are novel to English ears. When a wire is "in contact," it is reported to be "swinging," and when to "earth," it is "grounded." Sometimes, during intermittent contact, it is reported that "there are bugs on the wire." A "ham" is what we know by the synonym "duffer," and woe unto him if he has a smart operator at the other end. The rate of transmission, so far as sending is concerned, is doubled and interspersed with such lively but somewhat annoying remarks as the following. For instance, he may be asked if he has time to go and shake a carpet, or if he could spare a few moments to go and milk a goat. These sarcasms speak for themselves. Speaking of "hams," I should explain that they are manufactured in "plug factories," and these "plug factories," which are simply schools of telegraphy, presided over by dismissed and worthless operators, who make a certain charge for tuition, giving sufficient knowledge to enable their pupils to get into the service by "the skin of their teeth," at a ridiculously low salary, promise to become a source of great regret to the legitimate telegraphist. Hundreds of these "hams," badly salted, and never cured of their Chinese tricks of working for low wages, are taking up positions in the telegraph service here, which will eventually result in ruin to the fraternity, bringing, as it certainly will, a general reduction of salaries; but the public will be equal losers, for no educated person would enter one of these schools; consequently the "plug factories" secure ignorant schoolboys or anyone who can pay the premium.

This alarming and ominous state of affairs is exorcising American operators, and I believe they are organising themselves into a strong body to "cure hams" by strong means—not by striking, but by more legitimate means. In the large cities there are, perhaps, a dozen schools of telegraphy, offering no comparisons, except odious ones, to the London schools. In addition to this threatened evil, there is the prospect of hundreds of good operators being thrown out of employment, in consequence of the projected consolidation of the "Baltimore and Ohio," "Postal," and "Bankers and Merchants" Telegraph Companies, in opposition to the Western Union Company. I believe the latter to be the greatest telegraph administration in the world, having 440,000 miles of wire, against 120,000 worked by the consolidated Companies.

The instrument generally in use is the Pony Sounder. I have never seen a Morse slip instrument in this country, except the original Morse—a primitive-looking appliance, which is covered by a glass and kept as a curiosity at the main office of the Western Union Company, in Broadway, New York. A very interesting relic. Duplexes and Quadruplexes are quite common, and are worked at a very high speed. The Wheatstone Automatic is worked from New York to Chicago and New Orleans, with a relay at Buffalo, for Chicago, a distance of over 1,000 miles. Mr. Strudwick, late of the racing staff of England, is the manager of the Wheatstone Department in Chicago, and is very popular, and, I hear, does justice to that wonderful instrument.

The Phelps Printer, however, is the quickest and best telegraph instrument in the world. It is worked on the quadruplex system, two sides being used for sending and receiving, the other sides simply for "breaks" (ordinary Morse, Key, and Sounder, by which the receiver at either end can stop the sender when the type has "run out.") By this instrument one hundred telegrams per hour are frequently sent; one man having on one occasion sent eight hundred messages in a day. Between New York and Philadelphia it is no remarkable thing to find the day's total for that one wire reaching 1,200 and 1,300. A full description of the instrument is given in Prescott's "Electric Telegraph," published by Appleton & Co., New York; but at the time that excellent book was written the speed attained on this type-printer was much lower, neither was it worked as a quadruplex. It may astonish some of your readers, especially the old "Hughes" operators, to learn that this instrument will often run a whole day without the type running out, or the sender being called upon for a repetition. It is surprising that such a wonderful instrument has never been introduced in England. Mr. Preece saw it in New York, under unfavourable circumstances, but if he could see it now, daily working at the rate of sixty words a minute, I believe he would "consider the matter."

It is at present only in operation between New York and the following cities, viz., Philadelphia, Boston, and Washington. Being somewhat difficult to learn, there are very few Printer operators in the States, but any efficient "Hughes" operator would soon master it.

If space would permit, I should like to give your readers a description of the head office of the Western Union Co., in Broadway, New York; but its wonders are so many, that it would occupy too great a share of your columns. Mr. Dealey, whose name is as familiar in this country as your Mr. Fischer, occupying a similar

position, is universally esteemed, and always ready and willing to give visitors every facility for seeing the *crème de la crème* of American telegraphy. I give this as a hint to any of your readers who may come across; but, in conclusion, I would advise English operators to stay in the "tight little island," as there is not enough work for those who are here. AMERICUS.

OUR ELECTRICAL INDUSTRIES.

A VISIT TO THE WORKS OF MESSRS. H. AND E. J. DALE.

THE names of the principals of this firm are pretty well known without as well as within the electrical world, in consequence of the terrific struggle between the makers and monopolisers of a useful invention, and two vile culprits who dared to sell a few yards of wire, some bits of thin iron, and sundry little magnets, which, when put together, form the instrument known as the telephone.

These two villains were dragged to justice by the great Liverpoolian and his satellites. The learned judge, who was influenced by the overwhelming evidence of the mighty U. T., censured the culprits in the severest language, and condemned them to Holloway Prison until his lordship should feel satisfied that they were purged of their rank offence. By a fluke, Mr. Edward Dale escaped the "stone jug," but Mr. Henry was escorted to Her Majesty's Hotel, where he was graciously permitted to pay for his lodgings, a privilege usually denied to the majority of the customers, much to their own gratification, we should imagine. The case was fully reported in the newspapers, and several journalists commented upon the enormity of the "crime" committed by the Brothers Dale. Some ignoramuses even sympathised with Professor Bell, and regretted that he should have been done out of his royalty! Manufacturers who were envious of the rapid progress of the culprits' works and trade shook their heads and pulled long faces when the subject was mentioned. Oh, they were so virtuously indignant all of a sudden. They never sold bar-magnets and circular pieces of iron, not they. They wouldn't be guilty of making a telephone. Oh, dear, no. Whenever they were asked a question about telephony, they always referred the querist to his Majesty in Cannon-street. They respected the patent-laws, they did. And all the unauthorised telephones must have been put up by the Brothers Dale. What a mercy it was that Nemesis had at last overtaken them! The reputation of the trade, so long at stake, was saved, and no more telephones would be fixed up on the sly. And so on *ad nauseam*. Not a word of the true story reached the public ear. At the trial the defendants had not an opportunity of unmasking an individual whose share in the business, if it had been known at the time, would have saved a little of the judge's indignation or transferred it to another quarter, and the public would have sympathised with the Dales instead of condemning them.

We will raise the curtain, and let our readers have a glimpse behind the scenes. A certain individual, having a fancy for the electrical trade, but minus capital, waits upon Mr. Henry Dale, and asks to be supplied with goods on credit, so as to enable him to open a shop for the sale of bell-fittings, and other electrical apparatus. Mr. Dale, whose greatest fault is his readiness to say "Yes" to any man who wants a helping hand, agreed to supply him with the goods he required. The shop was opened, and, after a brief interval, the person in question wrote to Mr. Dale asking him for some information about the parts of telephones. The latter, believing that he was dealing with a friend—for they were on visiting terms—wrote the information asked for. These letters were carefully treasured by this man, and handed over to the U.T.C.—for what reason we are unable to state; but we presume our readers will have no difficulty in surmising. Mr. Henry Dale's transaction in relation to telephones was a friendly one, and we are in a position to state that the telephone, since its invention, has not brought much grist to his mill. On the contrary, he has every reason to wish that the invention was still in the womb of Time. As regards the United Telephone Company, they cannot be blamed for protecting their rights, but we think they ought to be less dictatorial. They have succeeded in obtaining an unprecedented monopoly. They have a giant's strength, and they use it like a giant.

The telephone is a splendid and useful invention which cannot be bought!! The would-be purchaser says, "I am willing to pay the legal royalty, but let me buy the instruments." "No," says the company, "you shall not buy them. You must hire them from us, and pay us whatever we like to demand." Professor Bell is said to be worth considerably more than half-a-million of money, his rights have been pretty well looked after, and it is now time for legislation to interfere, and put an end to a pernicious monopoly,

which has already resulted in the entire collapse of the telephone trade.

Some six or seven years ago the Brothers Dale founded the house which bears their name. Henry Dale had been long connected with a city manufacturing firm, and his brother Edward was well known as a clever conjurer, having performed for periods at Brighton, New York, Boston, and Washington. At one time Edward Dale travelled with the renowned Heller, of "Heller's Wonders" fame. The brothers started in a very small way as manufacturers of electrical and optical apparatus. From the very first they never had to solicit custom. By honest dealing and unremitting attention to business they soon had to enlarge their premises, and now they can boast of three important branches—one in Kirby-street, Hatton-garden, another in Little Britain, and a splendid shop in Ludgate-hill. On the occasion of our visit we first inspected the Kirby-street works, where all the cabinet-makers are employed. The first object that engaged our attention was a five-horse-power gas-engine driving all the shafting at this branch. The building consists of five floors. On the second floor we found the cabinet-makers, thoroughly competent workmen, surrounded on all sides by indicator cases, and photographic cameras in various stages of construction. On the first floor we saw in progress the manufacture of a very useful dynamo machine, something similar in appearance to the Siemens type. This machine, we learnt, is sold for £13. 10s., and it is capable of lighting six ten-candle-power lamps.

On another floor eighteen men were busily engaged at as many lathes, turning barrel pushes, and the numerous parts employed in the construction of microscopes. On the ground-floor we noticed a new patent wire-covering machine. And in another large room we were introduced to half-a-dozen artisans of the gentler sex, who were polishing the frames, pushes, and cases turned out by the cabinet-makers above. Two rooms were devoted to the manufacture of the Ludgate Dry Plates and the sensitised paper used in the art of photography. These rooms had a very gloomy appearance, for, owing to the chemical effects of the blue rays of the solar spectrum, the plates and paper have to be prepared in the dark, or where the actinic rays are excluded. After we had looked at the forge, we followed our guide to Little Britain, the original headquarters of this firm. Here we found on the lower floor an enormous stock of outer stoneware pots and inner porous pots, for Granule and Leclanché cells. We spent some time examining the process of making the batteries, and not the least interesting part was the fitting of the porous pots with crushed carbon and binocide of manganese, and the sealing over with a vile-looking compound made of pitch and ozokerit which, in the hands of skilful workmen, gave a neat and finished appearance to the cells. In the packing-room goods were being cased for all parts of the world. At the time of our visit a quantity of apparatus was being got ready for Dunedin and China.

The upper floor, which is acknowledged to be the lightest workshop in the City of London, was entirely filled with lathes, and a number of skilled mechanics were engaged on light experimental work, and the construction of induction coils, bells, &c., &c. On the upper floor we found some more lathes suitable for very delicate work. Several new inventions were in hand—electric gas lights, new indicators, and electric clocks. In a room partitioned off on this floor a number of young damsels were winding bobbins for electric bells and fixing springs on pushes. Indeed, the ladies seemed to handle the smaller work with such dexterity that it is a wonder they do not excite the envy of the men, whose fingers are sometimes too clumsy for delicate work. The store-room was filled with unfinished goods, all the finished work being sent to Ludgate-hill, where the show-rooms are always open to the public, and where a splendid stock of electrical apparatus may be seen by any of our readers who would like to give Messrs. Dale a call.

Our guide informed us that a large number of men are constantly employed in fitting up electric bells and speaking tubes. Messrs. H. & E. J. Dale have had many important contracts to fulfil, including the Shrewsbury and Liverpool Hospitals, the Winchester Hall Estate, the Cedars Estate, Kensington, and the Bedford Park Estate. They also gained the bronze medal at the Calcutta Exhibition for their patent multiplex cameras, recommended by the greatest of photographers, Captain Abney. The Dales have published two elaborate catalogues, electrical and photographic. The former has been imitated but never excelled, while the latter may be considered a complete list of apparatus and chemicals used in the delightful art of photography. After visiting the works and showrooms of Messrs. H. & E. J. Dale, we could not help feeling an admiration for these two self-made men, who, in spite of envy and trade malice, have established a large and flourishing manufactory in the short space of seven years, starting not as large capitalists, but as two honest, hard-working men in an obscure corner of the City of London.

THE SUNDAY LABOUR QUESTION IN THE PROVINCES.

THE provincial telegraph clerks have been very active since the Annual Conference held at Birmingham in June. Numerous meetings have been held to discuss the Sunday Labour Question, and, as an outcome of these meetings, petitions from nearly every important provincial centre were forwarded on Monday, Aug. 11, to the Postmaster-General, praying that all Sunday duty be treated as overtime. The provincial clerks have a strong case, and have made the most of it. They have put forward their claim in a reasonable form, and, if their request is not complied with, a more satisfactory reason will have to be given for withholding the extra payment asked for than that offered to Sir Herbert Maxwell in the House of Commons—viz., That Sunday labour had always been exceptional in London, but, by a Post-office rule, it was not considered so in the provinces. The petitioners say that the companies recognised and paid for Sunday work as overtime, and that it was also treated and paid for as exceptional by the Post-office for some time after the transfer. The petitioners also urge that the best means to minimise Sunday duty is to treat it as overtime, and this is certainly borne out by what has happened in America since the companies there granted extra payment for the seventh day's work.

It is stated that the clerks employed at "relay stations," as well as the military staffs at Bristol, Exeter, and other towns, receive overtime payment for the exceptional duty, so that the Post-office rule is disregarded in their case, as it is in the case of all the female clerks, which means that in London, 659; in Dublin, 70; and in Edinburgh, 61, of the entire staff are not required to do any work on Sunday, so that the labour of necessity falls more frequently on those who have the misfortune to belong to the male sex; and they allege it is rendered more of a hardship than it would otherwise be owing to the onerous nature of their duties during the week."

The *Edinburgh Evening News* says:—"Mr. Fawcett was unable to give any satisfactory reason why London should be—as it too often is—treated exceptionally in regard to Sunday labour. Rather, he proved that the grievance of the provincial staffs is well founded. . . . Members of Parliament should insist on seeing justice done in this matter."

The *Edinburgh Courier* says:—"In London the clerks who work on Sunday are paid for doing so; in the provinces they are not. Some time ago Sir Herbert Maxwell asked Mr. Fawcett for an explanation, if explanation there were, of an arrangement that on the face of it looks so unjust. The Postmaster-General was non-plussed. He admitted that more work was done in the provinces than in London on Sundays. It would appear, therefore, that the provincial telegraph-clerks have a real and substantial grievance. The justice meted out to telegraph-clerks in London is refused to those in the provinces. It is not surprising, therefore, that steps should be taken to ensure a uniform treatment of officials who perform the same duties."

The *Glasgow News*, like Sir Herbert Maxwell, is "unable to see why the London telegraphists should be paid for Sunday working any more than the clerks in Edinburgh or Glasgow when the same quality of work is performed by each. It can hardly be expected that the telegraph-clerks in the provinces will rest satisfied until they are placed on an equal footing with the Londoners."

The *North British Advertiser* says:—"Don't make fish of the one and flesh of the other," is a protest which few can long resist; and, if resisted, almost invariably ends in inefficient service, and the sacrifice of well-meaning and generally efficient servants. Now this, shortly put, was the contention of the telegraph clerks at their meeting last Saturday in favour of limiting their work hours to six days per week. A fair remuneration for the work done, and extra pay for extra work, wherever performed, no one, we fancy, will or ought to grudge. If this course has not been pursued in the past, sooner or later, grumbling or discontent might be expected to arise; and it is to be hoped, now that the matter is brought temperately and pointedly before the authorities, no unnecessary delay will take place ere it be rectified."

The *Edinburgh Evening Express* says:—"There seems to be a twist in the minds of the Postmaster-General's advisers, for they never look at a thing from a common-sense point of view, but always from some grotesque official standpoint. You may find common-sense in the most unlikely places, but never at St. Martin's-le-Grand. Ask the Edinburgh telegraph clerks who have to do Sunday work for nothing, while the London staff is paid for it, if common-sense arguments have any weight with the Postmaster-General, and the same old story of red-tape and unbending officialism will be heard over again."

THE TELEGRAPHIST ON WHEELS.

I AM pleased to learn that the Electric Athletic and Cycling Club have decided to introduce tricycle races at their annual sports, to be held at Stamford-bridge Grounds, Fulham, on Saturday, Sept. 6. The tricycle is a grand institution, and every encouragement ought to be given to the "wheeling world." In recommending the "iron horse" to the notice of our readers I must not forget to state that for a very long time I was opposed to both bicycling and tricycling, but since I have had a taste of the latter I have become a convert, and I am at the present moment one of the most enthusiastic admirers of the tricycle. It is often urged by persons who have never tried tricycling, that such machines are only fit for young athletes. Indeed, I used to think that the exertion necessary for the driving of the tricycle might be hurtful to persons of delicate constitution, and whenever a friend proposed the tricycle as an excellent substitute for horse-riding—my favourite sport—I always pooh-poohed the idea, and preferred Shanks's pony since my equestrian days were over. How I became a tricyclist I hardly know. It was done all of a sudden. A friend persuaded me to hire a machine. In what I considered a weak moment I yielded to his arguments, and hired a—well, for want of a better name I will call it the "Big Brute." It was one of the first introduced by Starley, of Coventry—a lever motion, with a steering arrangement something like a bath-chair. After an hour's puffing and blowing I declared that the tricycle was a swindle, and I fancied that the tread-mill must be child's play to the "Big Brute." I should like to know the sum of the energy I expended during that hour's hard labour. How many foot pounds or Watts would it represent? How much muscular tissue had I burnt up in that hour? The owner of the machine coolly remarked, "It will do you good sir," as I flung my 14 stone in a chair, panting like a thirsty hound, and muttering curses, not loud, but deep, against all tricycles and tricycle makers. I vowed never to mount a machine again; but like the child with the cayenne lozenges, who, while yelling with a burning tongue, cannot resist another suck, I had a second ride, on a wretched old thing of the Meteor pattern, which I christened the "Barge pole." I didn't perspire quite so much this time; but was still of opinion that the tricycle was only fit work for criminals. My third ride was on a dreadful piece of mechanism painted yellow, another of Starley's first, and named by me "The Yellow Brute." I was caught in a shower of rain—little boys shouted after me, and I declared as I returned the machine that I would never make another attempt. Some mysterious power, however, had got a firm hold of me, and I was always looking out of my window for tricyclists, and wondering how they managed to glide along so easily while I found it such fearful work. The fault must be in the machines my vanity prompted me to believe, and after a few inquiries I learnt that the proprietors of tricycle depôts seldom, if ever, let out on hire their good machines. They usually buy up all the old rubbish for the hirer. A blind policy you will admit, because that is just the way to disgust the novice and make him give up riding altogether. The treatment I received at the "hiring shop" certainly lost the proprietor two good customers, for after a little consideration and a few discussions on the relative merits of the best known modern machines, I decided in favour of the Coventry Rotary.

At the City dépôt of Messrs. Rudge & Co., I purchased one of their celebrated Convertible machines, and, after a few trials, I was able to appreciate the difference between hired and private tricycles. My first journey on the sociable was to Windsor and back, 36 miles, not a bad run for an amateur. I perspired a good deal; but I was not knocked up. My wife, who accompanied me, was only a little tired, although she cannot walk five miles without suffering great fatigue. Since our Windsor trip, we have had many long rides, and we think nothing of twelve or fourteen miles between tea and supper-time. I do not wish to say a word against any other machine except the "Big Brute" type; but I cannot conceive a better or easier tricycle than the Coventry Rotary. As a single machine, it is a marvel of lightness, elegance, and easy working; and, as a sociable, I believe it is the lightest and best in the market. I can get my tricycle through the street door of a private house, and I can convert it from a single to a double machine without assistance, in less than a minute. On a good road, we have ridden on the sociable at the rate of ten miles an hour; and I daresay that a couple of athletes would laugh at that speed on one of Rudge's machines. To telegraphists, who have to spend so many hours of their lives in confinement, I can strongly recommend the health-giving exercise of the tricycle. I do not wish to infer that tricycling is all *couleur de rose*. There are, of course, a few drawbacks. Envious blackguards will chaff you on the road, if you are in company with a lady. Hill climbing is not always pleasant, particularly in the dog days; ploughing through dust does not tend to sweeten one's temper, and ringing

and shouting for stupid people to get out of the way is far from soothing to one's feelings; but taking into account all its drawbacks, I must confess that next to horsemanship tricycling is the most enjoyable sport I have tried. It is also wonderfully economical. With a small bottle of lime or lemon juice to flavour the water, a glass, and a tin of sandwiches, two persons can go for a day's journey without spending more than a few pence. Tricycling is also far superior to travelling by rail or coach, because one can stop in a moment to view the country, to dine *al fresco*, to gather wild flowers for the herbarium, to search the pool for micro-objects, or to collect geological specimens for the cabinet. Thousands of machines are being turned out annually from the manufacturers at Coventry, the inhabitants of which place are doing well in erecting a monument to the elder Starley, the "Stephenson of the Tricycle," who has been a real benefactor to that old-fashioned town, immortalised by the legend of Lady Godiva and Peeping Tom.

W. L.

ELECTRICAL BLUNDERS.

THE rural genius who, on receiving a complaint respecting a case of inattention which had occurred owing to his needle having been demagnetized by lightning during a severe storm, offered the sweetly simple excuse "that he had had some thunder up the wire," will compare favourably with the countryman who, whilst calling to his wife through the telephone, was struck to the ground by lightning, but jumping to his feet again exclaimed "That's our Sally, I know'd her smack."

It is a matter for surprise that so much ignorance exists amongst telegraph clerks respecting electrical matters.

On one occasion, having asked a P.O. lineman to kindly say, per wire, what was the official standard for bich.-cells from list supplied to his office—the information (!) was received in the following form:—

Resistance 2 drms.
Highest allowance 3 per cell.
Election motion 2:14, &c.

I thought of the Franchise Bill!!!

In another case, a clerk had purchased an electric bell set, which he was desirous of fixing himself. Having, as he said, fitted it up according to the instructions, but being unable to get the bell to ring, he requested a fellow-clerk to call round and examine. An examination of the connections showed they were right.

"Have you got good earth?" was asked.

"Oh, yes! In the cellar to keep nice and damp!"

"Let's see it!" And the visitor was forthwith taken down the cellar, it being explained on the way that the "earth" had been bought at a florist's, so he knew it was good.

The "good" earth turned out to be a Huntley & Palmer's biscuit tin, filled with the best loam.

The following is another illustration to show how little some clerks understand what constitutes an "earth" connection.

A friend of mine had made a pair of telephones. They gave very good results for a couple of hundred yards; and he had a desire to give them a longer trial. On the occasion of a fellow clerk visiting a village three or four miles out, to which a single wire ran (branch line), he was deputed to take one of the telephones and join up. On his arrival he explained to the station-master one object of his visit (the other was for the purpose of meeting the pretty daughter of a farmer, for she occasionally gave him a drive in the milk cart). The obliging station-master at once ushered our hero into the joint booking, parcels, and telegraph office (also the repository for calves in sacks).

It was quickly ascertained there was no gas-pipe, and that water was procured from the spring.

"Oh, never mind!" he exclaimed. "Should you mind sending a porter for a bucketful of ballast?"

"Certainly not," replied the SM, despatching one forthwith.

Meanwhile this disciple of Bell's quickly removed the cover, and joined the telephone to D—, line side (instrument intermediate), and another piece of wire to the other telephone terminal for the earth connection; and on the arrival of the yokel commanded him in an awe-inspiring manner to "hold that end in the bucket."

It was a sublime spectacle; the SM gazing on earnestly, the yokel holding one end of the wire in the bucket, his mouth having now nearly extended from ear to ear, as though trying to rival in dimensions the top of the bucket, whilst Bell's successor alternately spoke in sweet and thrilling tones to the milkmaid?—no, to the telephone!—then bobbed it to his ear. However, failing to hear, or be heard, he explained: "They had no doubt connected-up wrong at the other end," and went his way, the SM and porters' admiring gaze following. It would probably be interesting to hear of a few more blunders.

J. F.

WEST LONDON SCHOOL OF TELEGRAPHY.

MONTHLY COMPETITIVE EXAMINATIONS.

COMMERCIAL DIVISION.

Mr. Alfred Innes Pocock, Castle Hill, Maidenhead, passed as a thoroughly qualified Telegraphist—Morse, Printer, and Sounder Instruments.

COMPETITIVE EXAMINATION (SOUNDER INSTRUMENT: SENDING AND RECEIVING).—*First Pupil*: Miss Sarah Walkington, 73, Dock-street, East, Monkwearmouth, Sunderland.

COMPETITIVE EXAMINATION (SINGLE-NEEDLE INSTRUMENT: SENDING AND RECEIVING).—*First Pupil*: Mr. W. B. Williamson, Docking, Norfolk.

COMPETITIVE EXAMINATION (OFFICE DUTIES).—*First Pupil*: Mr. W. B. Williamson, Docking, Norfolk.

ENGINEERING DIVISION.

TELEGRAPH ENGINEERING.—Subjects: Chemistry, Physics—Molecular Theory of Electricity—Static and Voltaic Electricity—Electro-motive Force—Conductivity—Resistance—Ohm's Law—Chemical Action of Simple Voltaic in Daniell, Grove, Bunsen, Leclanché, and Bichromate Cells—Polarisation—Merits and Defects of Batteries—Magnetism—The Molecular Theory of Electro-Magnetism—Galvanometers—Single Needle and Sounder Instruments—Faults in Telegraph Apparatus.

MECHANICAL.—The Construction of Galvanometers, Bells, Induction Coils, and Telegraph Instruments.

First Engineering Pupil: Mr. J. E. Hewes, Post-office, Coalville, Leicester.—Percentage of questions successfully answered, 98. Instruments constructed by Mr. Hewes: Ore $\frac{1}{4}$ -in. Induction Coil; one small Sounder Instrument; one 4-in. Bell.

"THAUMA."

OF all the marvellous and puzzling illusions which have from time to time been presented for the amusement of the public, surely one of the most inexplicable is that latest wonder now being exhibited in duplicate at the Crystal Palace and the Brighton Aquarium, and known as "Dr. Lynn's Thaumata." In justice, however, to the original inventor, we should state that "Thauma" is not, so we have been told, the outcome of Dr. Lynn's brain at all, but of a Mr. J. Winson's, who has sold a portion of his interest in the illusion to Dr. Lynn, hence associating that well-known conjurer's name with it. We always like to give honour where honour is due, and we cannot help thinking that the credit of so clever a deception should belong to the right party. Before entering into particulars of this illusion, we should remark that its great success has been achieved from the apparent absence of all the usual mysterious appendages of the conjurer's art. It is not exhibited on some dark stage many feet or yards from the spectator, but, vulgarly speaking, "under his very nose." No darkness lurks in the apartment where it is being exhibited, but, on the contrary, flaming gas-jets throw a powerful light around.

"Thauma" is the upper half of a female figure, supported on a simple garden-swing at about two feet or so from the spectator, apparently entirely destitute of any lower limbs, and consisting solely of head, bust, and arms.

There is no suggestion at all of mirrors or looking-glasses, as the space all round is free and open, and the exhibitor, to prove that Thauma is unfettered and unconfined by anything, sets the swing rocking, the effect thus produced being marvellous. There is something though of the horrible, when, at the request of the exhibitor, Thauma catches hold of the chains of the swing and raises her severed form completely from it, whilst the seat of the swing is removed.

We have seen many wonders of the magician's art, but Thauma, we confess, puzzles us. Agreeable and condescending, she shows no signs of any inconvenience from the absence of her lower limbs, but, though we know that they are there somewhere, we can fully enter into the feelings of an old lady who was viewing her, and who, after gazing in silent wonderment for some few minutes, burst into tears, exclaiming, "Well, my poor girl has lost one of her legs; but her case isn't half as hard as this poor lady's." And the good old dame was led weeping from the apartment, fully persuaded that Thauma was some unfortunate creature cut in two from some railway accident, or possibly submitting to such a cruel fate for the sake of "gain."

BIRTH.—On July 21, at Emmet-place, Limerick, the wife of Mr. J. L. O'Hanlon, first-class telegraphist, of a son.

Editorial Notes.

THE ANNUAL SPORTS OF THE ELECTRIC ATHLETIC AND CYCLING CLUB.—Our readers will find on advertisement page ii. a full programme of the annual meeting at Stamford-bridge Grounds, Fulham, on Saturday, September 6. We hope that the profession will be well represented on that auspicious occasion. The Western District Postal Telegraph Band, under the able leadership of Mr. J. Cullum (an old electric), will be in attendance to play selections.

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HOLIDAYS.—We understand that female telegraphists in receipt of 30s. per week and upwards are in future to have three weeks' holiday every year. Now is this fair to the male staff? The ladies have no Sunday duty, they are exempt from attendance on Christmas Day and Good Friday, so that practically they will get thirty-six days leave against twenty-one to the males—some of the latter having double and treble the service and performing night and late duty in addition. With all due deference to the fair sex, we cannot see the justice of this new rule, but we can guess the quarter from whence it emanates.

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SUNDAY DUTY IN THE PROVINCES.—The provincial clerks are still agitating for Sunday-pay, and we do not blame them. The subject, no doubt, is going the round of the Circumlocution Office; and we can see in our mind's eye bales of red tape and reams of blue paper to be used up before the hardworking telegraphist gets his due. Readers of Dickens will understand our slightly figurative language. The English Government official is like a stubborn donkey. He won't go without a deal of prodding, and the only way to penetrate his tough hide is to stir him up with the spurs of the public press. Already several influential journals have taken up the question, and it must not be dropped until the eyes and ears of the Executive are thoroughly opened. The manners and customs of Government officers remind one of the inhabitants of Laputa, who were deaf and blind to all that was going on around them until their auditory and visionary organs were opened by means of flappers carried by their attendants. Some of the highest in command, revelling in sinecures with splendid salaries and handsome pensions in perspective, need a good deal of flapping before they rouse from their torpor; but we have only to persevere, and the appeal sent up from the provinces will be read and attended to when the flappers of the press have thoroughly awakened these worthy officials, and convinced them that they have a real wrong to redress.

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T.S. PROBATIONERS.—The letter in our correspondence column headed "Get Clerk" throws a light upon the management of the Metropolitan section of the Central Telegraph Office. That a set of youngsters should be able to delay the public work just to gratify their own particular whims and fancies is to be deplored. We have a number of unpublished letters from various quarters of the metropolis revealing the every-day antics of these half-fledged telegraphists. They seem to do just as they please on the Metropolitan wires. Not satisfied with delaying the work with such silly expressions as "Get clerk" when there is no other clerk to be had, they have the supreme audacity to refuse messages unless the code time is altered, in order to avoid certain explanations which are necessary when a station has been calling for ten or fifteen minutes. *Audi alteram partem* is our motto. Therefore we shall make no further comment until we hear from some one in authority in the "Met."

Literary Notes.

A Practical Treatise on Electric Lighting. By J. E. H. GORDON, B.A., M.S.T.E. (Sampson Low, Marston, Searle, & Rivington).—Mr. Gordon has produced an excellent book which will be of great practical value to the electrical engineer. There are several good works on electric lighting, but many of them contain either too much historical data for the practical man, or the descriptive part is defective and the formulæ excessive. Mr. Gordon's descriptions are not bald, and his tables of formulæ are just as much as the electric light engineer is in want of and no more. The illustrations are admirably got up, and reflect the highest credit on both author and publisher.

WE learn that a German edition of the successful brochure, "John Bull's Neighbour in Her True Light," will shortly appear.

The Central Telegraph Office, London.

THE annual sports in connection with "T.S." will take place on Saturday, September 6th, at Stamford-bridge. There are several events for runners, walkers, and also events for both bicycles and tricycles. We can only hope there will be both a good attendance and a good entry of competitors.

EVERYBODY, who is anybody, is out of town now, and judging from the astonishingly sudden increase in the number of telegrams from Scotland, it is quite evident that the land of porridge has secured more than its usual share of visitors.

THE work at T.S. though, perceptibly diminishes with the adjournment of the "House." However, we are promised an autumn meeting in October, and as by that time Government will be doing something decisive as to whether "Brave Gordon" is to be rescued or left to his fate, we may pretty safely anticipate a busy winter.

I HEAR they are doing something for all the learners at the School who are competent, but for whom there are no vacancies. They are making temporary messengers of them. A very brilliant scheme, quite dazzling, and horribly unjust. It's too bad to make a lad lose some months of his time learning, and then when he is thoroughly competent, to offer him a messenger's place, because "some one had blundered." By the by, who is responsible for the breaking of faith with the public over the sixpenny rate? I fancy it must be the Treasury. However, the learners must suffer.

THE T.S. Dining Club seems to be improving slightly. I can only hope it will continue in the same astounding vein, and sincerely trust our journal may have been the means of bringing about this unprecedented event. Or is it one of those accidents that will happen?

Provincial Items.

CARLISLE.

WE regret having to record the retirement, in consequence of prolonged ill health, of Mr. J. W. Hargrave, who has been the engineering representative of the Post Office Telegraphs in Carlisle, since the transfer to the Government; and, for twelve years previously, he represented the British and Irish Magnetic Company in a similar capacity. Mr. Hargrave carries with him the best wishes of the entire Post-office and Telegraph staff in his retirement, and they hope that the rest which he has so well earned will, together with the delightful air of Scarborough, where he has settled, have a beneficial effect on his health, and enable him to enjoy his merited pension. On Monday last, the Carlisle officials testified their esteem for Mr. Hargrave by presenting him with a handsome field-glass, silver biscuit-basket, and address.

DURHAM.

RAILWAY clerks will learn with regret the death of Mr. Henry Hardinge Veitch, familiarly known as "Harry." Deceased was a native of this city, and entered the North-Eastern Railway service as telegraph instructor, was promoted to the junior relief, and latterly was stationed here and at Ferry Hill Junction. At the time of his death, however, he was connected with the Goods Department at South Shields. "Harry" was twenty-two years of age, a member of the 2nd D.A.V., and in 1881 was one of a detachment that won the National Grand Prize at Shoeburyness. He was a lover of athletics, and his form was truly "of the manliest beauty." His call was a sudden one. Complaining, as he did, of a slight shivering on Sunday evening, July 27, brain fever ensued, resulting in death on the evening of Sunday, August 3rd. His remains were buried at St. Cuthbert's, Durham, on the Wednesday following, and were attended by over 200 young men who truly mourned the loss of one whose amiability and patience in life made him beloved and esteemed by all.

FOR some time the London and North-Western Railway Company have successfully used a telegraphic code, and the same, I understand, is now being tried between some of the more important stations on the North-Eastern Railway Company. The code is something after the system of telegraphy in the navy, formed of letters, there not being more than three letters in one group. It is very ingeniously compiled; in fact, will meet the requirements of every department of railway work, and in book-form it fills about 70 pages, 6 in. by 3 in. To the older class of railway men, the messages are somewhat perplexing, and meet with opposition; for instance, one letter after DQ may mean "Arrange to stop train leaving," while two or three may answer the purpose of about

thirty ordinary words. I have often wondered why railway companies didn't adopt such a method of signalling, as there is a striking sameness about all their messages. Of course, such a code could not possibly be worked for public messages, and from what my informant says, I should say there is no encouragement for telegraphists in that company. It appears the department was decentralised about two years ago, and the clerks now are under their immediate district superintendents. When a clerk receives about 12s. a week, he must draft into another department before he can get an advance whether he is fit for that office or not. My advice to those about to join such services is "don't." Those young clerks who really love their calling and respect themselves would do well to enter H.M.S., where merit is recognised and service not despised.

EDINBURGH.

ELECTRIC SHOOTING CLUB.—Favoured by genial weather and a romantic venue, and graced by the presence of all the youth and beauty, and most of the age and honour of E.H., the fourth annual competition of the Electric Shooting Club, which was held on Saturday, 26th July, at the Braid Hills, was perhaps the most enjoyable which has yet taken place. The occasion, it should be observed, was one which partook of the protean character of a shooting meet, a picnic and an *al fresco* dance. Operations began with the shooting at the 200 yards range, whilst the ladies away down in a meady hollow, and attended by a few aspirants to their smiles, fortified themselves with creature comforts and vied with each other at the skipping rope, or foted it to the merry strains of the Cremona. Returning to the 500 yards distance, which was adjacent to the immediate scene of the picnic, the competitors partook of tea and cake, followed up by a dish of the succulent strawberry. Now the real fun of the evening began, for here were to be found in delightful medley the various votaries of Terpsichore "kiss in the ring," tug-of-war, three-legged race, and the joust. This last game, it should be explained for the benefit of the uninitiated, is taken part in by one "fellow" mounted on the back of another, who tilts at a similarly mounted youth until either or both is overthrown. Then in turn came the distribution of prizes—a duty which was performed by our worthy Superintendent-in-Chief, Mr. Gray, prefaced by a few apt and graceful words. Wending our way "o'er hill and dale" to the Braids Davey Farm, an hour's dancing was here enjoyed, a grateful interlude being formed by a rollicking song from Miss Noble, which was well received. "Auld langsyne" being sung, the evening was brought to a happy termination by a progress homewards, made merry with song and chorus. The following were prize-winners:—Mr. W. Wood, superintendent, 58; Mr. A. J. Wilson, 52; Mr. J. Irvine, 52; Mr. R. Hart, 48; Mr. J. C. Robertson, 46. *Ladies' Prizes*: Mr. G. Slater, for Miss Walton; Mr. Wood, for Miss Laing; Mr. Wilson, for Miss Elliot; Mr. Wood, for Miss Paterson; Mr. McDonald, for Miss Flett.

GLASGOW.

LITERARY.—At a meeting of the Literary Club, Mr. P. Ward read an excellent paper on "Social, Political, and Moral Evolution."

RETIREMENT.—One of the oldest members of the late Electric Company's staff, Mr. A. Yule, has, after a long service, retired, and is now in receipt of a pension in proportion to his service. The Glasgow staff, and others, trust that his spirits will regain their wonted buoyancy now that he is relieved from exhausting night duties, and that he long may be spared to enjoy his well-earned *otium cum dignitate*.

SWIMMING.—The competitions in connection with the swimming club are fixed for an early date. The entries are pretty good, and augur well for a successful meeting.

RESIGNATION.—Mr. Rob Donaldson has resigned his appointment, which he has held for a number of years as operator. He intends to adopt the musical profession. We wish him all success.

THE MAY EXAMINATIONS, 1884.—In Glasgow, nineteen went forward to the examination in magnetism and electricity, and of these only one failed. Messrs. Jas. C. Binny, Wm. Fulton, and Wm. Richardson passed first class in the advanced stage. Six attempted the ordinary stage in telegraphy, of whom five passed. Messrs. Jas. C. Binny and J. W. Collier passed second class in the honours stage in telegraphy. In both subjects all were connected with classes at the College of Science and Arts.

HUDDERSFIELD.

PROMOTION (POST OFFICE TELEGRAPHS).—The following is extracted from the Huddersfield *Daily Examiner* of the 23rd inst.:—"We are pleased to inform our readers that Mr. Thomas O. Hewitt, for many years a member of the Huddersfield telegraph staff, has been appointed an inspector of the second class on the engineering staff of the Post Office telegraphs, and will, in the course of a few

days, take charge of the Carlisle section of the north-western district. Mr. Hewitt has well earned his promotion, as for many years past he has been an earnest and painstaking student in electrical science matters, and that he has been successful in that respect is proved by the numerous certificates and class honours he holds, which have mostly been obtained at the Huddersfield Mechanics' Institute. Mr. Hewitt's courtesy and attention when in sole charge of the electrical exhibits at the recent Fine Art and Industrial Exhibition will doubtless be well within the remembrance of our friends." At the City and Guilds of London examination for 1880, Mr. Hewitt passed A 1, second prize £3, and bronze medal.

HULL.

THE Hull Civil Service Cricket Club, which has previously been in a drooping condition, owing to the inability of its members, through overtime and shorthandedness at the office, to get practice and play matches, is now in a flourishing state, the causes of its retrogression having been removed.

THE clerks' trip to the seaside, which had been arranged with commendable skill, and in connection with which eager anticipations had been indulged, was unfortunately attended with wet weather, which continued almost without intermission throughout the afternoon and evening. Notwithstanding this, however, a fair proportion of the staff betook themselves to the appointed places, and, in spite of the relinquishment of the sports (enforced by the state of the weather), a very enjoyable time was spent. I may state incidentally that, as the result of the May examinations in "magnetism and electricity," those of the H U staff who took part therein have acquitted themselves creditably, no fewer than six obtaining a "First," one of these being for "advanced."

LEEDS.

CRICKET (Married v. Single).—This match was played at Apperley Bridge, Saturday, July 19, and resulted in a somewhat easy victory for single team. Messrs. Guest and Willey exhibited some capital all-round play. The second venture of the married men proved more successful; the score standing at 20 for two wickets. The scores were as follows:—

SINGLE (First Innings).

J. A. Guest, c and b Haley	22
T. Willey, c and b Haley	12
H. Brown, b Ibbetson	0
R. Hird, b Ibbetson	0
A. Wilkinson, c Richardson, b Ibbetson...	1
F. Briggs, run out	0
C. Trenam, c Richardson, b Haley	0
J. Whitley, b Ibbetson	5
R. Harper, run out	7
A. Revell, run out	5
H. Jackson, not out	4
Extras	7
Total	63

MARRIED.

First Innings.		Second Innings.	
F. Richardson, b Guest	4	not out	9
A. Buckley, c Wilkinson, b Guest	0		
J. Haley, b Willey	1	not out	4
G. Butler, b Guest	3		
J. Ibbetson, run out	1	c Brown, b Hird	1
J. North, b Guest	4		
H. Simpson, by Willey	3		
E. Coote, c Wilkinson, b Guest	3		
W. Lodge, b Willey	3		
W. Whitworth, c and b Willey	2		
J. Hockaday, not out	2	b Hird	3
Extras	0	Extras	3
Total	26	Total	20

The ground was not one of the best, and the "married" were at a further disadvantage as regards "weight," some of them having "laid it on" since they last handled the willow; but in preparation for the return match, which is being arranged, they are in strict training! Among the spectators was Mr. Chambers, the Divisional Engineer, Miss Chambers, and Mr. Trenam, our Superintendent, who was also accompanied by Mrs. Trenam, whom all were glad to see, as indicating an improvement in her health. At the close of the game an adjournment was made to the Stansfield Arms, where upwards of fifty sat down to an excellent tea; after which, with Mr. Trenam in the chair, and Mr. Guest at the piano, the remainder of the evening was most

enjoyably spent, members of both the male and female staff ably contributing their "musical quota."

ASSISTANT-SUPERINTENDENT P. WALSH, who had a dangerous attack of erysipelas, some months ago, is still away on sick leave; he is, however, improving.

A PETITION was sent in from this office on Aug. 11, having 105 signatures appended, praying the P. M. G. to concede payment for Sunday duty.

WHAT NEXT?—The female staff here have been informed that, commencing immediately, all female telegraphists in receipt of 30s. a week and upwards, are to be allowed annually three weeks' leave of absence. Comment: The male staff are moving in the matter.

FOR THE LADIES.—It is stated, on reliable authority, that there is to be a wedding (in a month!).

MIDLAND RAILWAY.—The TELEGRAPHIST is now looked for with interest, the only regret being that the issue is not a fortnightly one. A cricket club has been formed, and is in a flourishing condition. The members consist of both the indoor and outdoor staffs. Removal: T. Kilburn to Masbro.

LEAMSIDE (N.E.R.).

ON the 1st ult., Government messages were accepted during office hours, 8 a.m. to 8 p.m. It is expected the authorities will also appoint this a "receiving station" at an early date. The station is an important junction on the Durham and Sunderland branch, and the nearest post-office is West Rainton, a mile and a-half away.

MANCHESTER.

ON Monday the 4th inst., a number of the MR staff visited Stockport and played that office what may now be termed the annual game at cricket. The weather being all that could be desired, the out was a most enjoyable one. J. H. Jackson's and J. Crosbie's bowling having good effect, the MR men succeeded in reversing last year's decision in winning the game by twelve runs. The usual convivial meeting took place after the game, when mutual expressions of good feeling were reciprocated.

PORTSMOUTH.

GOODWOOD always makes plenty of work in this neighbourhood, and this year, owing to the exceptionally fine weather, we have been inundated with visitors, and, consequently, experienced a heavy pressure of business.

AN addition to this staff has just been allowed of three telegraphists, one being for holiday relief.

A MEMORIAL was sent in to the Postmaster-General, asking for overtime payment for Sunday duty on August 11.

SHEFFIELD.

UNDER the heading of "Round the Town" "Rambler" publishes the following in the *Sheffield Daily Telegraph*:—"A correspondent sends me a cutting from a Bradford Simcoe (Ontario) paper for last June, which refers to a Sheffield man—Mr. F. G. Newton, formerly a telegraphist here. He afterwards studied for several years at the Church Missionary College, Islington, and went to Canada to recruit his health. The climate has agreed with him very well. Mr. Newton has already been licensed as a lay worker by the Bishop of Toronto. On June 5 the members of the Presbyterian Church in the 'Scotch Block, 2nd West Gwiltimbury and Scotch Line,' presented him with an address and a well-filled purse, in recognition of the excellent services he freely rendered during the revival meetings held in that village."

THE friends of Mr. Vyle will regret to hear that he is once more on the sick list.

FISH WITH ELECTRICAL ORGANS.—There are at least a dozen species of fishes which are alone among animals in the possession of electric organs. That these natural batteries exhibit true electric phenomena is shown by their currents behaving in exactly the same way as those produced artificially. Thus says Gunther, "They render the needle magnetic, decompose chemical compounds, and emit the spark." To receive a shock it is necessary in the one apparatus as in the other that contact should be made at two points in order to complete the circuit. The various species of electrically-armed fishes are not, as might have been expected from the common possession of so unique a weapon, by any means all closely related. They all belong to three widely different groups, named rays, eels, and sheath fishes, which would seem to indicate that electric organs have originated independently in each group. The electric eel of South American waters is the most powerful of these creatures, growing to a length of six feet and provided with a pair of batteries containing some hundreds of minute cells copiously supplied with nerves.—*Electrical Era* (Philadelphia).

Cable Companies.

From the "Practical Telegraphist" we find that there are no less than forty-six wires at work between England and the Continent, nearly all of which are worked by the Submarine Company from London direct to the various capitals and chief cities. Upwards of 8,000 messages pass through the Submarine Company's office daily. By telegraph London is within easy reach of all the important towns in Europe, if not by direct wire, by means of one transmission only. London works nine circuits to Paris, and Paris has wires to the following foreign centres:—To Berlin and Brussels, three each; to Vienna and Frankfurt, two each; one each to Amsterdam, Turin, Basle, Antwerp, Rome, Strasburg, Milan, Berne, Bergen, Cologne, Geneva, Florence, Metz, Hamburg, and Mülhausen; also direct wires to every important town in France.

ANGLO-AMERICAN TELEGRAPH CO. (LIMITED).—Brest Station.—On July 27 Mr. Walter Johns (late of the Anglo, Limited) left here for Waterville, Ireland, having received a first-class appointment in the Mackay-Bennett Cable Company. Before leaving he was entertained at a farewell dinner by the Pq's and Anglos. Mr. Johns was greatly esteemed here by all those who knew him, and his departure was very much regretted by his numerous friends and acquaintances.

COMMERCIAL CABLE COMPANY.—Although one of this Company's cables has been completed, it has not been opened for traffic. It is expected that the Company will not commence business until the second cable is laid next month. Messrs. Jones, Holt, Milner, and Carmichael have joined at Waterville from the Anglo Station at Valentia, also Mr. Johns from the same Company's Brest station. Several of the D.U.S. and Anglo men on the American side have joined at Dover Bay. Mr. J. Furze, from D.U.S., Co. Ballinskelligs, has been appointed superintendent at Liverpool.

CRICKET.—The return match between the "Valentia" and the "D.U.S." cable clubs was played at Ballinskelligs on the 4th August, and resulted in a victory for the "Direct" by four wickets. Scores: Valentia, 48 and 19; D.U.S., 37 and 31 for six wickets. The "Direct" club has been very successful this season, having won every match played.

LIVERPOOL CABLE COMPANIES v. POST-OFFICE TELEGRAPHISTS.—The return match between these clubs was played on the ground of the former on Aug. 2, and again resulted in a victory for the home team, who won by 58 runs. Scores:—

CABLE COMPANIES.	TELEGRAPHISTS.
Platt (captain), c Taylor, b McConchie	Nottingham, thrown out ... 1
Bell, b Taylor	1 Chappell, c Platt, b Hopkins 15
Hodgkinson, junr., c Wolfe, b McConchie	27 Mellor, c Hodgkinson, junr., b Green
Hopkins, b Chappell	1 Taylor, b Bell
Green, b Chappell	20 Poole, b Hopkins
Chesters, b Taylor	0 Wolfe (captain), b Green ... 0
Edwards, c Nottingham, b McConchie	0 McConchie, by Hopkins
Durward, c Mellor, b Taylor	0 Goldsack, run out
Healey, thrown out	12 Saunders, c and b Green
Hodgkinson, senr., not out ... 1	0 D. Owens, c Hodgkinson, junr., b Hopkins
Gardner, c and b Mellor	5 Jeffries, not out
Extras	24 Extras
Total	99 Total

SOUTH AFRICA.—"On Saturday evening Mr. J. P. Edwards was entertained to dinner at the Café Royal by the Cape Town telegraphists, of which body he is the superintendent, the occasion being the early departure of Mr. Edwards on a well-deserved holiday in the old country, in quest of renewed health and vigour. A very pleasant evening was spent, the proceedings being enlivened by song and toast. It is needless to say that the 'Guest of the Evening' was pledged with an enthusiasm which shows Mr. Edwards to be as great a favourite with his own staff as with the general community. In his visit to the old country, Mr. Edwards will take with him, we are sure, the best wishes of everyone connected with the metropolitan press with whom his official duties have brought him in contact." The entertainment referred to in the foregoing extract from the *Cape Argus*, reminded us telegraphists of many happy gatherings of a like nature in the old country. It may interest a few of our old friends to know that in this, the most southern extremity of the Dark Continent, we possess the material necessary for a social evening, when opportunity offers. On this occasion all vied with each other to banish dull care, and make the rafters ring with song, jest, toast, and sentiment. Mr. Dixon, of Bradford, was

particularly side-splitting in his song "The Gay Moriarty." The guest of the evening surprised everyone by the artistic manner in which he rendered "Come, Cheer Up, My Lads," while "In Days of Old," and "Pull Away," gave Mr. Jones, of Manchester, an opportunity of showing that old MR. was well represented. Mr. Tasker, of Manchester, gave "If I had a Donkey," in a manner which would make the fortune of an itinerant minstrel. He afterwards sang "The Village Blacksmith" in good style. Eyre, of Derby, after responding for "The Ladies" gave "Here's to the Maid," in a way which produced a result natural; his encore being "The Vicar of Bray." Forbes, of Edinbro', with the national spirit which always distinguishes the Scot abroad, let off his pent up feelings in "Scots Wra' Hae." Naylor (Southport), Mann (Aberdeen), Wolfe, Judson, and Jardine (Colony), all contributed, the first named sharing the oratorical honours with Forbes. Altogether a very pleasant time was put in, and when the company dispersed at a late hour "Auld Lang Syne" was sung with a vigour which the climatic influences of sunny South Africa has not by any means been fatal to. Mr. Edwards left for England per steamship *Tartar* on June 25th.

Electrical Tit-Bits.

RESISTANCE AND CONDUCTIVITY FROM AN OHM POINT OF VIEW.—The resistance of the human body is over 1,000 ohms, and it is thought that this, in a great measure, accounts for the difficulty with which one telegraphist is "induced" to answer another's circuit. As a rule, a good "test" for this "fault" may be made by a careful "reading" of the "current" of one's thoughts, as there is generally a strong "indication" of the "needle," accompanied by a "continuity" of "disconnected" utterances. Such faults should be attended to at once, as they develop rapidly, and soon make good working impossible.—F. E. B.

AN EXPENSIVE TELEGRAM.—Telegraphing is dangerous when it becomes too personal. An Austrian Countess, Madame Pongratz de Metternich, recently sent the following brief but expressive despatch to Governor Passinger, at Neustadt:—"You are a black-guard." The Governor, who is said to have no idea of gallantry, summoned his fair enemy before a magistrate, and she was sentenced to a fortnight's imprisonment and three hundred florins fine.

HATCHING CHICKENS BY ELECTRICITY.—Chickens are now hatched out by the aid of electricity. The nest or basket is filled with fine hay, upon which the eggs are laid. The cover is a thick layer of soft down attached to a round box containing coils of wire. These are heated by an electric current, whose temperature is regulated by a thermometer placed on the cover.—*Telegrapher's Advocate* (New York).

ELECTRICAL SURGERY.—A few days ago a boy named Ulmer, in Portland, Me., got a piece of steel into one of his hands. A surgeon examined the wound and decided that he would have to cut the hand open for two inches to extract the piece of steel. He first took the boy to the Western Light station, and tried the value of electricity as a surgical aid. The piece of steel had gone down through the hand. A steel instrument was inserted into the wound until it reached the piece and the instrument was then magnetised, and drawn from the wound, drawing the piece with it, leaving only the small hole where it had entered to heal, and thereby saving the usefulness of the hand.—*Electrical Review* (New York).

WITH TEETH AND EYELIDS.—J. T. Norris, of Springfield, O., the detective, does a trick that probably no other man in the country can imitate. He takes a silver coin, usually a dollar, and places it on his tongue between his teeth. With his tongue he strikes it against the teeth with the sound of a telegraphing instrument, the opening and closing of the circuit being exactly imitated. Norris used to be an operator, and by means of the coin can telegraph words so distinctly that any telegrapher can easily read the message. In this manner he telegraphed forty words a minute. A *Republican* reporter wrote out a message on a Western Union blank and handed it to the detective. The two operators in charge at the Southern took down the words as fast as Norris produced them with the coin. The message was rapidly sounded and written down, and all three copies coincided exactly. Mr. Norris can stand up before a telephone and in this novel manner telegraph a message which any telegrapher can read with great facility. But the most wonderful thing is to see him telegraph with his eyelids. The dots and dashes of the telegraphic alphabet he imitates by more or less rapid opening and shutting of the eyelids. In this manner he can converse with an expert without uttering a sound.—*Operator* (New York).

Correspondence.

To the Editor of the TELEGRAPHIST.

OCEAN TELEGRAPHY.

SIR,—Kindly allow me to offer a few remarks with regard to the letter and article by "Old Electric," on Ocean Telegraphy, which appeared in the August number of the TELEGRAPHIST, and to endeavour to correct a few of the statements so modestly put forward by your contributor.

He says, "Ocean Telegraphy is essentially of British origin, being the result of British enterprise, British capital, patience, and perseverance;" and that "Ocean Telegraphy is a department of electrical science into which our American cousins have but recently made their *début*." I take most decided exception to those statements, and with your kind permission will endeavour to show your readers and "Old Electric" that Ocean Telegraphy is essentially of American origin, and is the result of American patience and perseverance, and that, so far from "our American cousins" just making their *début* in that department of electrical science they were the very first in the field. Will your contributor try and control his virtuous indignation while he reads this letter? I do not propose to follow his method—I am not infallible—but will rely on higher authorities than myself.

On March 10, 1854, was signed the agreement to organise "The New York, Newfoundland, and London Telegraph Company," the object of which was stated in the first sentence of its charter to be "to establish a line of telegraph between America and Europe by way of Newfoundland." The Company was formed in a private house, that of Mr. Cyrus W. Field, in New York, and composed of but five individuals: Peter Cooper, Moses Taylor, Cyrus W. Field, Marshall O. Roberts, and Chandler White, all Americans, some of whom are living at the present time. Small attempts had been made in Europe to transmit messages under water; first across the River Rhine, but half-a-mile wide, and next across the English Channel (1850). A few other sea cables were laid, but only in shallow water and for short distances, the longest, that to Holland, being but 130 miles, and in water only a few fathoms deep. Surely your contributor would not call this *ocean* telegraphy. But, presuming he might say this was the germ from which it sprang, I would remind him that in 1842 Professor Morse laid a submarine cable from Castle Garden to Governor's Island, in the Harbour of New York; and that in 1846 Colonel Colt and Mr. Robinson, of New York, laid a wire from New York to Brooklyn, and from Long Island to Coney Island.

This American Company was the first to propose to span the ocean, and it was Lieut. Maury, U.S.N., who first taught electricians how to find a track for their cables through the great depths of the sea.

Three attempts were made by this company to establish communication between Newfoundland and Ireland. Each time the cable broke, and at each break a million and a quarter of dollars sank into the sea. They were ultimately successful in 1858, but only for three weeks, when signals failed to pass through the cable. Another unsuccessful attempt was made in 1866, and communication was finally established the following year, "mainly by the exertions of the same indefatigable spirit which had originated the project, and urged it forward in spite of all obstacles for twelve years."

This undertaking was far different from that of towing half a mile of wire across a river, or laying a wire across the English Channel. The Atlantic cable was two thousand miles long, and laid in water two miles deep.

Narvin Green, President of the Western Union Telegraph Company, says:—"In 1854, and up to a period ten years later, it was almost universally held by the most scientific and experienced electrician, that about six hundred miles was the maximum distance at which it would be possible to send a telegraphic current for any practical purpose through a submarine cable in one circuit." It was for Cyrus W. Field and his colleagues to show them their error.

At a reception held at the house of Mr. C. W. Field, on March 10, 1879, to commemorate "the twenty-first anniversary of the formation of the first company ever formed to lay an ocean cable." Mr. Cyrus Field, in the course of an address, said:—"Of my associates, it is to be said, to their honour—as might be expected from men of their high position and character—that they stood by the undertaking manfully for twelve long years, through discouragements such as nobody knows but themselves. Those who applaud our success know but little through what struggles it was obtained. One disappointment followed another, till 'hope deferred made the heart sick.' We had little help from the outside, for few had any

faith in our enterprise. But not a man deserted the ship; all stood by it to the end." This was Yankee grit, and "Old Electric" seeks to deprive them of the credit and honour of it.

W. H. Russell, LL.D., says:—"Let who will claim the merit of first saying the Atlantic cable was possible, to Mr. Field is due the inalienable credit of having made it possible." Sir James Anderson, managing director of the Eastern Telegraph Company, writing to Mr. C. W. Field, and speaking of the great system of cables now in existence, says:—"To have been the pioneer, *par excellence*, in this great work, should be most gratifying to yourself and your family; and no man can take from you the proud position."

Dr. Stephen, Postmaster of Germany, telegraphed to Mr. Field on the occasion of the reception alluded to above, his "sincerest congratulations to the originator of the admirable work of ocean cable."

J. Watson Webb, late U.S. Minister to Brazil, wrote:—"Ocean Telegraphy would have come to us when it suited the wisdom of God and the advance of science to give it to us; but you have won the distinction of having anticipated its arrival by a period of more than twenty years."

I think, sir, the authorities quoted may be supposed to have some little knowledge of the subject, and that they, together with the facts mentioned, are sufficient to prove to your readers that the statements in "Old Electric's" article are decidedly incorrect, and that it is to American energy and pluck we owe Ocean Telegraphy. The work done by the British in the enterprise is deserving of great praise, and it is not with any desire to detract from the merit of that work that I write this; but to give to the overseers, platelayers, and navvies who build a railroad the credit of being projectors, architects, and engineers of the road, is a new and rather startling departure. Give honour where honour is due, "Old Electric," and don't attempt to rob men of the credit of an undertaking which, for requiring enterprise, faith, perseverance, or, in a word, *grit*, is second to nothing in the world.

I take it, your readers must have been somewhat perplexed when, after having perused "Old Electric's" article, they read in another part of your paper of "the system and ease with which even two great continents are now joined by the electrical devices of such ingenious and persevering sons of Massachusetts as Prof. Morse, of Charlestown, and Cyrus W. Field, of Stockbridge," and that "telegraphs and ocean cables might have come if these men had never been born; but it cannot be denied that, but for the indomitable energy of these Yankees, their realisation would have been long delayed. How does "Old Electric" reconcile these statements with his?

But, sir, apart from the above, I fail to see any reason in your contributor's objection to the American articles; if your readers get good, practical information, what does it matter whether it is given by an American or by a Chinese? He might, with just as much reason, object to the result of Dr. Koch's cholera researches being published in England, and pitifully cry, "Is there no one in our own country to be found to undertake the task? Don't our doctors know anything about cholera?"

In conclusion, sir, I beg to respectfully suggest that the American articles be continued, and that "Old Electric's" rhapsody of "Dots and Dashes," his "amusing chat," and snatches of his autobiography, be published under some appropriate title, and not allowed to masquerade under that of "Ocean Telegraphy," than which none could be more misleading.

I must apologise for taking up so much of your valuable space; but ask your kind indulgence for my attempt to redress a gross injustice.—Yours very truly,

Liverpool, Aug. 13, 1884.

S. J. P.

IGNORANCE UPON ELECTRICAL MATTERS.

SIR,—It appears doubtful whether the report headed "Durham" in last month's issue originated with the P.O. or Railway offices; but the remark respecting the ignorance shown upon electrical matters by railway clerks might, I think, be applied with equal justice to postal clerks, and more so; for the ignorance which exists amongst those who have not the opportunities to acquire a practical knowledge, is not to be so strongly condemned as it is on the part of those who have the opportunities, but fail to take advantage of them.

The range which a railway telegraphist has is usually confined to his single-needle instrument; or in one or two of the head offices on the Midland, N.E., or L. and Y. lines, Bright's bells are used; but as regards testing, the means are simply *nil*.

I heard on one occasion of a railway clerk who, being asked if they had a "detector," held over for a short time, then asked, "Do you mean a man?"

Never having to make any tests, what matters to him the difference between tangent or astatic, differential or vertical gal-

vanometers; or why should he, after his nine to twelve hours' duty, entailing a constant strain upon his eyesight, further add to the strain by poring over the dry detail of the principles of resistances, current, quantity, or capacity, when such a knowledge is never called into practice?

As a rule, he is only too thankful to escape from the apology for an office, and the thoughts of all connected with it.

Further, and a most important point, the pay being so meagre, it is to his advantage to confine his service to a few years only—28s. per week being about the average to which a railway telegraphist advances, the pay of C.C.'s being in many instances far below that received by a Post-office clerk of the second-class, although the responsibilities are far greater.

Take the opposite side. You find the Post-office clerk amongst all classes of instruments—A B C, Bells, Sounders, Ink Writers, Double and Single Current Working Wheatstone's Automatic; there are tangent and other galvanometers, technical instructions issued, &c.

Does he make the advancement, and acquire such a knowledge as might be expected?

It does not follow that because he is amongst them he can *always* be studying them. By no means; but after reading up the theory he has, I assume, the privilege of examining them when at leisure, and can consult the test clerks or his controller, some of whom, no doubt, would willingly render a little assistance to a fellow-clerk. I do not say all, for some mortals appear to consider that parting with a little knowledge is equal to parting with their life's blood, and, therefore, stick to it.

My object in asking for space in "ours" for the insertion of this, is to suggest—now that the evenings are drawing in—whether, at least at the larger offices, "Improvement Classes" could not be formed; and whether the P.O. clerks would fraternise a little with the railway telegraphists, and give them an opportunity of seeing and becoming acquainted with those instruments, which at present they can no more understand than could Moffatt's savage the writing on the wood. This might stimulate both P.O. and Railway clerks. Subscriptions could be made—a trifle weekly—for the purchase of a few good books, and to defray the expenses of procuring a few simple instruments for the elementary portion—some could be home-made, and thereby add to the interest.

I shall be glad to hear what any fellow-clerk may have to suggest.

RAILWAY CLERK.

SUNDAY WORK.

SIR,—You are aware that in one of the Ten Commandments we are strictly forbidden to do any manner of work on the Sabbath Day. Now, is postal and telegraph business not a manner of work?

I think postal business should not be allowed on that day, and telegraph only in very urgent cases. Hoping some of your readers will state their opinion on this subject,—I remain, yours,

ANTI-SUNDAY WORK.

GROCERS' ASSISTANTS AT THE TELEGRAPH.

SIR,—In your last number you gave us some amusing anecdotes of postmasters and postmistresses at the time of the transfer of the telegraphs to the Government. You evidently referred to a period of about thirteen or fourteen years ago, and one would expect something better after the long experience they have had since the transfer, but I regret to have occasion to inform you that there are still some bright specimens of telegraph-clerks even in the London offices. I am engaged at an office in the West-end (address enclosed), and on my circuit there is a grocer's shop. The telegraph instrument is in charge of a youth—the grocer's assistant, I presume—and this model telegraphist makes it a practice of interrupting me when I am in the middle of a message. If he has a telegram, he does not wait until the line is clear, but begins calling T.S., and then commences a struggle, which invariably causes long delays. This grocer youth has been reported over and over again, but he is invulnerable to "blue paper," so I suppose the public will have to put up with the delays. I hope, Mr. Editor, you will publish this letter, for such a splendid telegraph-clerk deserves a notice in your columns. I wish I knew his name, so that you might enter it on your list of telegraphic worthies.—I am, Sir, yours, &c.,

FRIZ.

"GET CLERK."

SIR,—As a humble member of the Telegraph Service, I venture to raise my voice against the absurd practice of the probationers in the metropolitan section at T.S. whenever they discover that a new clerk is engaged at a sub-office; and I take the liberty of

asking you, sir, if the superintendents at the Central really encourage such tomfoolery as I am about to describe. A short time ago I commenced duty at a rather busy London office, and I sent about thirty or forty messages without any dispute. Towards evening I had a fresh clerk to deal with, who soon discovered that I was a new hand. Instead of receiving the messages as the other clerk had done, he began repeating that idiotic sentence, "Get clerk," "Get clerk." After vainly trying to get off my work, and struggling on the instrument with the ill-natured youth or girl at T.S., I got so excited and confused that I lost all control over myself; and on another instrument at an office close by was received an S.G. from the superintendent to remove me. Now, this I call a true case of might against right. There was an impudent probationer, perhaps fresh from the school, delaying the public messages, and backed up by the superintendent of the division. Of course the superintendent did not see the performance of the "plug" he defended. He simply heard his story, and I was made the victim.

Another matter I would like to bring before your notice. At the place where I was trained I was taught that to alter the code time to please an inattentive clerk was a serious offence. Now, I can affirm that it is the rule for the clerks in the Metropolitan section to refuse messages with the original code if they have allowed a station to call some minutes, and I have been obliged to post-code my messages before T.S. would take them. This is humbugging the service and the public with a vengeance, and under the very nose of the superior officers, too! What is the use of those donkeys at T.S. repeating "Get clerk" when they know there is only one clerk at a small office? The expression applies to some of the plugs put to the Metropolitan wires at T.S., for only the other day I was ten minutes getting off a message under twenty words, and I had "not understand" for such words as "at" and "the." Well may we hear complaints from the public about delays when boys and girls at the Central Telegraph Station, London, are allowed to play with the wires and obstruct, instead of aiding, the business of the department.—Yours truly,

ONE WHO KNOWS HIS BUSINESS.

THE FOREIGN TELEGRAPH SERVICE.

SIR,—I was rather surprised to see "Condenser" (who, from the tone of his letter, is evidently in the service of the P.O.), advising clerks to stay in the P.O. service, in preference to going into a Cable Company. In my opinion, the appointments in the P.O. are not to be compared with those of the cable service. There are many clerks who, receiving a salary of 20s. or 25s. per week in the P.O. service, have obtained places in the companies at the rate of £6 per month, which advance would have taken them four or five years to obtain had they retained their original appointments; and I think, Mr. Editor, that a clerk who, in three years, cannot show himself worthy of an advance in salary has mistaken his vocation. It is, I think, more encouraging when advanced according to merit, than by the present system of the P.O., by which the greatest "duffer" obtains the same increment as a man who is competent to take any circuit in the office, the better man obtaining the doubtful compliment of working better and faster circuits. For some of those men who, with nine or ten years' service are, by some unexplainable and not-to-be-inquired-into method, in the first class, undoubtedly the P.O. is the best place for them. But, as we can't all be in the first class, I would recommend any young man who can do so to get an appointment in a cable company if he desire to better himself. The work cannot be harder, as at present we have to work as hard as we possibly can, and in a cable company or any other service no one can do more than that.

Re "peculiar" superintendents. They are not all in the cable companies. Apologising for trespassing on your valuable space, yours, &c.,

IL ZINGARO.

["Condenser" is not a postal telegraph clerk. He has been in the cable service some years.—Ed. TELEGRAPHIST.]

Queries.

A USELESS RELICT.—Why are received European messages encumbered with the date of handing in? Few, if any, exceed twenty-four hours in transit; therefore the value of the date to the receivers is so insignificant as to be out of all comparison with the burden of transmissions necessary to supply it. What special reasons there can be to justify their continuance in these when they are dispensed with in all other messages, puzzles—H.N.

The Telegraphist

A MONTHLY JOURNAL OF

POPULAR ELECTRICAL SCIENCE.

Speed the soft intercourse from soul to soul,
And waft a sigh from Indus to the Pole.—POPE.

LONDON: WEDNESDAY, OCTOBER 1, 1884.

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OCEAN TELEGRAPHY.

(Continued from page 121.)

I HAD almost forgotten, my young friend, that we were going to look about outside, and see how our station was connected to the distant one, but we will do so now. You not only see now, but must have noticed many times, the rows of poles along the railways and roads running in every direction, and the burdens they carry in the shape of iron wires stretched from pole to pole, mile after mile, throughout the length and breadth of the land. I well remember the very first time I set my eyes upon them, and what a mysterious sight it was, and how it set me thinking. It was in the spring of 1846, at the completion of a walk of thirty-two miles, commenced at seven o'clock the same morning, from a market town in Bedfordshire to Cambridge. That evening I proceeded through the town to the bridge on the Hills Road, over the railway, and there, for the first time in my life, saw a railway train and the telegraph wires. Little did I think, notwithstanding the curiosity with which I viewed those wires, that so many years of my then future life would be spent in connection with them; but perhaps my experience in that respect may be only typical of that of many others.

Well, my friend, we must proceed. You observe the wires are not fixed directly to the wooden poles, but to porcelain or glazed earthenware *insulators*, as they are called. If the wires were attached to the wooden poles, a great portion of the current starting from the battery would be lost at every pole, especially in damp weather. To avoid this, insulators are fixed to arms attached to the poles, and the wires are fastened to them; these insulators, being (as their name indicates) bad conductors of electricity, prevent the leakage of the current *en route*, except in very minute quantities, so that a great portion of the current is carried to its destination to perform the work required of it. But the best of insulators have many enemies, amongst which may be mentioned cotton-waste, thrown away carelessly by engine-drivers on to the wires; kite-strings, and kite-tails, which become entangled in them, branches of trees touching them, or cobwebs spun by spiders inside the insulators, and from wire to wire; in all of which cases the effects will be worse when the weather is wet or misty. Frost, by contracting and shortening the wire, will often cause it to snap at brittle places. Besides these there are numerous other sources of outdoor troubles, but in order that communication shall be kept up satisfactorily, the wire must be maintained in good condition, well insulated, and continuous from one instrument to the other, and each end furnished with a good "earth" connection.

For this purpose the lines throughout the whole country are subdivided into comparatively small lengths, each one being placed under the special care of a lineman, whose duty it is to see that his own portion is kept in good order—that faulty and broken insulators are removed and replaced by sound ones, and dirty ones cleaned.

In many places rivers, creeks, inlets, arms of the sea, estuaries, channels, seas, and even oceans have to be crossed by the wires, where it is injudicious, inconvenient, or utterly impossible to cross them with wires on poles; and here, therefore, begins the first step towards actual subaqueous, submarine, and ocean telegraphy, since naked wires, such as we put on the poles, can no longer be used for telegraphic purposes and in order to cross such places covered wires must be substituted.

While we were dealing with wires on poles we were pretty free from everything tending to stop the passage of the current on the way to its destination except the bare resistance offered by the battery, the wire, and the instruments themselves; but as soon as we have to abandon the open, naked, and exposed wires, and have to cover them with gutta-percha, or any other insulating material to keep out the water when submerged, we have to deal with quite a fresh enemy to speed, called "*induction*."

Induction, of course, does exist, but to an infinitesimal degree between the wires on the poles and the earth beneath them; but, as this distance is great, and the air, which is a good insulator, is so thick a covering to the wire, the inductive effect is very small. There is also induction to a greater, but still comparatively slight extent between the wires themselves on the same poles running parallel with each other; but this does not very materially affect the working of the instruments in use on land wires or the speed of working, unless the latter, by automatic appliances, be very great.

The speed of electricity upon suspended wires, being good metallic conductors, is estimated to be approximately equal to that of light when not subject to any appreciable amount of inductive retardation; but this speed will be reduced more and more the longer we make the length of wire, covered with any artificial insulator, whether of gutta-percha, rubber, or anything else, when buried in earth or placed under water. Hence, short wires may be laid under rivers, creeks, or channels without very greatly reducing the practical speed of working; but when we begin to reckon the length by hundreds or thousands of miles, the practical speed of working which it is possible to attain becomes a very serious matter for consideration, since the commercial value of the cable (as a submerged wire is called) and the charges to be made to the public for its use, must depend entirely upon that result.

Induction has various phases, according to the method used for producing it. A glass frictional machine, producing positive electricity upon the prime conductor, at the same time produces negative electricity in equal proportion on the cushion or rubber. A Leyden jar charged with positive electricity inside will have an equal charge of negative induced upon its outside. An insulated, positively-charged body, suspended or supported in the centre of a room, will induce an equal charge of negative on all the surrounding walls and contents of the room. Voltaic-induction arises from dynamic electricity flowing in a wire laid, suspended, or wound parallel with another wire whose ends are united. If a positive current be sent into one wire in one direction, another wire laid beside it, or wound on the same reel, whose ends are united, will exhibit a current of momentary duration in a contrary direction. If the current in the primary wire be continued for an indefinite period of time, the effect on the secondary will be but momentary as a current, but when the current in the primary wire ceases upon breaking battery contact, there will be exhibited another momentary current in the secondary wire in a direction contrary to the former indication. Upon this principle shocking coils are made, and larger coils, such as Ruhmkorff's, are arranged for experimental purposes. The primary current being sent through a comparatively short coil of thick wire, induces in a surrounding coil of fine wire, a momentary current of every "make and break" of the primary current; this making and breaking of the current is so arranged as to be done automatically by the coil itself. The closing of the primary battery current causes the armature to be attracted, and this attraction serves to break the circuit, thus an alternation of makes and breaks is provided for with an amazing rapidity. Trembling bells are also arranged on this principle. A Leyden jar is a very cumbersome piece of apparatus, and consists virtually of two sheets of tinfoil, separated by a thin glass sheet, and furnished with a connection to both the inside and outside sheets. This being thoroughly understood, it is easy to see that a flat sheet of tinfoil (or any other metal), if separated from a similar sheet by means of any insulating substance, forms a Leyden jar in a thin, flat form, instead of one of bulky proportions. The result as to its capacity will depend upon the size of the metallic sheets and the thickness and perfection of the insulating medium, or dielectric.

Ocean telegraphy is so intimately associated with these "condensers," or improved form of Leyden jar, that, while upon this subject, I may as well go a little further with it, and explain how they are usually made up.

In practice it is found that fine foreign or bank post letter-paper saturated with melted paraffin wax forms a very good and very convenient dielectric, and, from its cheapness and thinness, tinfoil makes the most convenient metallic sheets, so that a large Leyden jar can be practically and economically constructed with two sheets of tin foil and a sheet of thin letter-paper soaked in hot

paraffin wax, pressed closely together, and allowed to cool under pressure. This imitation jar can be made up in any quantities in a very convenient form, and packed in boxes hermetically sealed, and furnished with connecting terminals outside. The capacity of a condenser is reckoned by "microfarads," and to give a general idea of what that means I will just add that on an average it takes *three miles, or knots, of a submarine cable to equal this unit of measurement*; each mile has, therefore, a capacity—an electrostatic capacity—of about one-third of a microfarad.

In making up these "condensers," the *odd* sheets of tinfoil are joined together to form one series, and the *even* sheets to form the other series, the outside and inside representations of the Leyden jar. Any desired capacities can thus be built up.

Should the sheets of tinfoil of one series be unequal in size to those of the other series, only that portion of the larger which is equal to the smaller will be effective. Similarly if twenty odd sheets be joined together to form one sheet twenty times the size of a single sheet for one set, and only ten of the twenty even sheets of the same size be joined together to form the other set, ten only of the twenty odd ones will be called into effective action; therefore it is not very difficult to see that no matter how many pairs of sheets there may be made up, one set can be all joined together permanently, and only as many of the other set as may be required for any given capacity or particular purpose. The single terminal to which the whole of one set is joined is commonly called the "Earth" terminal, although seldom connected directly to earth when used for cable-working. It is, however, joined to earth when used in connection with Land-line Duplex Apparatus. Having thus so fully described the principle of the Leyden jar and the Condenser, I think you will have no difficulty in seeing that all submarine cables are long, narrow, Leyden jars in principle, being of immense length and small circumference, the water surrounding them forming the outside and the copper conductor the inside sheets, the insulating substance between them being the gutta-percha (or other) covering of the cable conductor.

The inductive effect on overground wires, small though it be, considerably reduces the speed obtainable by the Wheatstone Automatic system of working, because, owing to the currents following each other with such great rapidity, there is a tendency in the signals to overlap and blend together, which in hand-keying was not so discernible.

In working telegraph lines, a small discharge from the line returns to the earth at the sending station after every signal. Had it not been for this phenomenon, it is quite probable that the duplex system of working on land lines would have proved a success as long ago as 1853, when Dr. Gintl experimented upon double telegraphing and failed, because there was then no knowledge of the means of compensating for this discharge at the sending end of the line, and the idea of a Leyden jar did not occur to him. This was one of his difficulties, and the other was that the keys he used broke the line at every flight up or down, thus varying incessantly the resistance of the line, and the inevitable result was a splitting of the signals. The system was very ingenious, but was pronounced to be "quite useless in a practical point of view."

Notwithstanding the rapid strides made in telegraphic science from that time forward, it was not until about twenty years later that Mr. J. B. Stearns, an American gentleman, to whom "necessity was the mother of invention," conceived the idea that the discharge from the line could be counterbalanced by an application of the Leyden jar principle in the form of a condenser, and, by exercising his mechanical ingenuity, he so modified the form of the sending-key that in all its positions, whether up or down, going up or going down, the line was never broken, but its resistance remained constant. These simple but effectual means rendered duplex telegraphy on land lines a success in America; therefore the palm must be given to this American gentleman for this discovery, which revolutionised telegraphy throughout the Old World and the New.

Perhaps, however, I am going rather too fast for my young friend, and he may desire to know a few more details about this land line duplex working, as it may assist him to reason better hereafter respecting ocean duplex telegraphy. Very good; then we will pause a few moments and consider it briefly. There are two principal methods of duplex telegraphy, one by the "Wheatstone Bridge" system, and the other by the "Differential" system, in either of which the object is to produce a balance between the line to be worked and an artificial line.

If a grocer desires to determine the weight of an unknown quantity of sugar, he uses weights of known quantity, and varies them in one scale until they balance the sugar in the other, and then the pointer on his scale-beam will stand steadily at zero. In duplex telegraphy the line wire and the apparatus forming "the circuit" represent the unknown quantity, and the known weights are represented by resistance coils made of German silver or platinised

silver wire, and arranged in a box in a form convenient for variation. This is commonly called a "set of resistance coils," or a "rheostat." The line, &c., must be put into one scale, the resistances in the other, and they must be accurately balanced. But where are the scales? The scales in the two systems I have mentioned are different in form, but the same in effect, i.e., they both indicate accurately when a balance is obtained.

In the "Bridge" system the beam of the scales is divided into two halves; each half is formed of a resistance coil, and if they are exactly equal they will split the entering current at the centre of the beam into two equal parts, one part going to one scale and the line, the other part to the other scale and the compensating line or rheostat. Between the two extremes of the scale-beam the receiving instrument is placed. When the scales have been balanced accurately by varying the rheostat till its coils are in resistance equal to that of the line, &c., there will be an equal strength of current, or potential, at each end of the beam; the "pointer" of the scales will stand at zero, and no current will pass through the receiving instrument when that station where it is placed is sending from his key to the other station; but any currents arising from the line on that side of the beam will upset the balance and pass through the receiving instrument recording its signals. This applies to the resistance of the circuit, but there is the static discharge from the home end of the line to be also compensated for, and this is done by joining up a small condenser, capable of adjustment for capacity so as to discharge itself in the opposite direction from the discharge coming from the line, and in an equal proportion.

In the "Differential" system the beam of the scales is itself the receiving instrument; the coils of the relay, or galvanometer, or other instrument, are wound with double wires, and these are so connected that the current shall enter both coils together, but traverse them in contrary directions. What one does the other neutralises—if one pulls right, the other pulls left with equal force. You well know the effect in a "tug-of-war" game when both sides are equally strong; no matter what power is used to pull one way, if an equal power be exerted to pull the other way, there will be a neutral result, or zero indication. So it is in a "Differential" instrument, whether it be a galvanometer or a relay, the object of which is to divide the current equally but oppositely, and thereby to produce no effect, however strong the currents sent through it may be. The rheostat and condenser are employed for balancing, the same in this as in the Bridge system. The advantage of the Bridge system is that any kind of receiving instrument can be used, whereas in the "Differential" system a differentially constructed receiving instrument must of necessity be used.

When the line is made up of a mixture of land wire on poles and underground or submarine cable, the balancing becomes more complicated, but it is perfectly practicable to obtain a balance by proper compensating arrangements. The covered-wire portion of the line (i.e., subterranean or submarine) will exhibit the phenomenon of inductive retardation upon charging the line, and that of inductive prolongation upon discharging it.

On a mixed line of cable and land-wire, when the cable is at the distant portion of the circuit, its discharge being prolonged will not be observed until after that from the land portion; and if this mixed line also begins with a short cable or underground wire, there will be an immediate discharge from that, independent of that from the land wire, and this will be again followed by that from the distant cable. Such a circuit requires a complicated compensation for its static effects. The short cable or underground wire will require a small condenser arranged for immediate discharge, then a larger one must be used for the distant slow discharge, whose discharge is also retarded. The discharge from a condenser can be retarded by resistance-coils used in connection with small, sub-divided condensers, or by a coil of wire wound round a soft iron core placed between one side of the condenser and the earth, so that by giving the discharge-current some work to do in magnetising the soft iron core, it is retarded in its action, and this retardation may be regulated by the length or diameter of the core; or, a further means of prolonging the discharge from a condenser consists of a bobbin of silk-covered wire wound with a sheet of tinfoil between each layer of wire, and allowing the discharge to traverse the wire while the tinfoil sheets are connected together and joined to the earth; or, still yet another plan may be adopted—that used by Dr. Muirhead in his artificial lines, of arranging one set of the sheets of a condenser in the form of a long ribbon.

Whether by Bridge or Differential systems, the battery forms part of the circuit when the key is down and a signal is being sent, but as soon as the signal ceases the battery is no longer a portion of the circuit; and as all batteries have some internal resistance, this must be provided for by inserting between the key and the

earth a resistance-coil equal to the internal resistance of the battery, so that whether the key be in use or not the resistance of the line shall remain unchanged. The current, therefore, must go

To earth through battery when the sending key's depress'd,
And through equivalent resistance when at rest.

OLD ELECTRIC.

WHAT CONSTITUTES A GOOD CLERK?

By INTERNATIONAL.

THERE is, I suppose, no question which has excited so much discussion in telegraphic circles as the one which heads this article. Nor is there another that might be asked of anything like the importance that appertains to this one. In attempting to answer it, I shall endeavour to eschew dogmatic assertions as far as possible, my desire being rather to indicate the various factors to be considered in arriving at a solution of the problem, and to initiate a discussion which cannot but be of the greatest interest and importance to those to whom "dots and dashes" mean bread and cheese.

To begin with, there are a few attributes which should be common to all clerks, and amongst them may be enumerated regularity and punctuality. These characteristics are of great importance in all businesses where time is an element, such as in railway, postal, and telegraph departments. Except for the fact that in telegraph working, seconds are more valuable than in the other sections of public business, punctuality is equally essential in all of them. These qualities are necessary, not only for the sake of securing the expeditious transaction of business, but they should possess in themselves a sort of selfish interest. There is, in the first place, a bad reputation to be considered, while in the second place is the equally important fact that very frequently the late arrival of a clerk means the otherwise unnecessary detention of another. If there is anything in this world which the average man who is entitled to a definite period of labour feels as a hardship, it is that the expiration of his term of duty should be involved in uncertainty. If he has to await the arrival of a fellow-clerk who is habitually or frequently late, even if only a few minutes, and who sometimes does not put in an appearance at all, he is debarred from the privilege which he should enjoy of being able to make appointments with his friends, or even of arranging for the prompt serving of his meals on his arrival home; while if that home is a few miles away from the office, there is the further disadvantage of losing a train. Life is made up of small things, and it behoves each man to interfere as little as possible with the small comforts of his neighbour. One would almost think that the fear of retaliation would prevent the infraction, but that is a feeling which is seldom excited, or which seldom shows itself. The man who is punctual in arriving in order to give himself a claim to punctuality in departure, is not likely to arrive late, even when the prospect of departing promptly is small.

A telegraph clerk should, of course, be as expert as possible, but it is not in the power of all to attain a high standard in this respect. Nevertheless, however dull the sense of touch, of sound, or sight, however ungainly or stiff the fingers may be, there is still a chance left for a slow hand to become a moderate operator on every form of instrument in use. No matter what others may aver, I maintain that there is no ear amongst us which cannot, by a little industry, acquire a fair amount of talent for sound-reading, nor is there one who is absolutely unable to "punch." All that is requisite is a little perseverance—the rest comes by practice. I grant readily that it is rarely possible to make a telegraph clerk of a man advanced in years who has never before touched an instrument, but I think it impossible that when the fingers have been accustomed to one form of instrument, they should be unable to learn to exercise them on another. And yet it is no uncommon thing to find a clerk who is proficient on the sounder or at the key, declare his inability to punch a sheet of news or read a message on the needle. Should this be so? Or does not the clerk who speaks thus belie himself? A man who can only manipulate a key, even if there be few equal to him on that instrument, I should be loth to regard as a good clerk. He is a good sender (or a good reader, a good puncher, or a good needle clerk), and that is all that can be said for him. To be a good clerk is to be good at every form of instrument in the office. I firmly believe that the inability in the great majority of cases arises from sheer obstinacy and an absolute determination not to learn. Fortunately, there is not wanting a sign that promotion in many offices will be, to a great extent, dependent upon the ability of those concerned to turn their hands to any instrument at which their services may be required.

Of course, when a man has a preference for, or is brought more in contact with, a certain form of apparatus, it is only natural that

he should become more expert at that than at any other. But expertness is not the only requisite. There is such a thing as care, and a clerk who takes that interest in his work which he should do, will exert himself to become acquainted with the various terms, phrases, names, &c., which frequently come under his notice. I have known men who could, did I desire the information, tell me the name, politics, and constituency of every prominent M.P.; the current price of all the important stocks, of corn, of metals, &c.; and the names and doings of many of the best race-horses. Such men are an acquisition to any office, and such a knowledge goes a long way towards forming a good clerk. I venture to assert that whether the perforator were made to move at ten or at forty words per minute, that man could not be fairly regarded as a good clerk who would in punching the description of a race say that the winner "made all the morning and won by a week," instead of "made all the running and won by a neck." Nothing but the grossest carelessness or the most wilful ignorance could evolve such rubbish as this. Nevertheless, such errors (!) are not altogether rare. Would that they were. Bad writing is no excuse.

Again, it does not become a good clerk to say that he is unable to read a bad slip or indistinct signals. Good signals or good marks a tyro may read; but we should gauge a good clerk by his ability to read a bad or difficult slip. But how often do we see the veriest nonsense written down because "it is on the slip." Surely, then, common sense is a factor not to be ignored. The telegraph clerk ought to have known that when Lord So-and-So instructed his servant to meet him at the station, it was the "gig" that was wanted, not the "pig." One error, the result of indistinct sending or of carelessness on the part of the receiver, occurs to me, and that is the substitution of "G" for "me." This is a frequent error, and must, as outside telegraphic circles the similarity is unknown, cause a deal of trouble. We can imagine the condition of Mrs. Smith on being asked to "meet G" (who is "G"? she'd like to know) "at the usual place an hour hence."

I think, too, that it is more than desirable that a clerk, to be good, should know something of the apparatus with which he is working. Nothing to my mind is so humiliating as to have to call for aid at every little hitch. Often have I known a circuit to be stopped for five or ten minutes when one turn of a screw or the movement of a plug would put matters right. Over and over again have I heard of an instrument that "wouldn't run" (because the spring had run down, and it wanted winding up), or of another that "wouldn't mark" (because the ink-well was empty). Several times, too, have I heard that the attention of a distant station could not be gained (when the line-wire was off the instrument or the armature was screwed down on to the coils). Instances of ignorance and carelessness of this nature I could mention *ad lib.*, but I have, I think, said sufficient to make clear my view.

It must not be forgotten that "temper" is a very important consideration. The clerk who, having attained a certain degree of efficiency, declines to work amicably with others who are less experienced than himself, not only confuses the distant clerk, and so hinders his progress, but in my opinion humiliates himself very considerably. How petty—nay, how silly—do the words "Get clerk" appear on a "sheet of blue;" and yet I suppose there are no two words so frequently on the lips, or rather the fingers, of many a telegraph clerk than these. Often the fault is on the line, or in one of the instruments, and then the impatient clerk looks, if he does not feel, more ridiculous than ever.

I have already, I fear, trespassed farther than I should have done, so I hasten to my conclusions, which I may summarise by saying that the attributes of a good clerk are punctuality, regularity, ability to work any form of apparatus (with exceptional dexterity on one or two forms), carefulness, acquaintance with frequently-used names, terms, &c., patience, and a knowledge of the general features of the various systems of telegraphy.

I might have enlarged upon the problem, Speed *versus* Accuracy, but must leave that and a few other points to be developed, as I trust they will be, in the Correspondence columns. The subject, I feel sure, is of great importance to all who have the welfare of the profession at heart and take pride in their work. I have been impelled to say what is here said from a conviction that the qualities of our clerks and their work are rapidly deteriorating.

ELECTRICAL BLUNDERS.—An incident which occurred recently at a provincial office is certainly worthy of a place in this column. It was no countryman or yokel this time, however, but an "old electric" with nearly or quite twenty years' service, getting close on £190 a year, who, being from London on leave, looked in at an office for the purpose of speaking to an out-station on an A.B.C. circuit. As he began to call, he said to a clerk working at the next instrument, "Let me see, can I work whilst you are? Are they on one set of batteries" !!!—FACT.

TELEGRAPHISTS' IN THE FIELD.

DEPARTURE OF PROVINCIAL TELEGRAPH VOLUNTEERS FOR EGYPT.

EDINBURGH.—Some little commotion was caused amongst the fighting portion of the staff when it became known that Volunteers from the Army Reserve men of the 24th Middlesex were wanted for telegraph service in Egypt. There was no lack of candidates for glory, nearly every Reserve man sending in his name. Unfortunately only twelve warriors are required, and as T.S. supplies five of these, the Met. district one, M.R. two, E.H.'s quota is restricted to four. Seeing that General Gordon is, or ought to be, a Scotsman, it is felt that the Scottish capital is being unfairly treated in the matter. The four men who have been selected are Messrs. Isles, C. Gray, Thomas, and Ballantyne, and the interest felt in their departure was so great that, limited as was the time, a special entertainment was organised to do them honour. This event, at which there was a large turn out, took place on Saturday, Sept. 13. Mr. J. Turnbull was called on to preside, and, under his benign reign, a very happy, not to say hilarious, evening was spent. Mr. G. Turnbull, a member of our staff, along with a brother belonging to the Postal Department, both of whom are accomplished violinists, aided by another gentleman at the piano, formed a small orchestra, which played accompaniments to the songs, and discoursed an enlivening series of popular music during the evening. The chairman, in proposing the health of the guests, expressed the hope that they would safely pass through the trying campaign in which they were about to take part, and that they would endeavour to maintain the honour of their country and the reputation of the office to which they belonged. The toast was drunk with the greatest enthusiasm. The volunteers left the following evening by train for London. Over a hundred clerks and personal friends were present at the Waverley station to bid the brave fellows good-bye. A few of the young lady clerks put in an appearance to take a tender farewell of the young recruits. After general handshaking, the train moved off amid hearty cheers and the fluttering of handkerchiefs from the ladies. It is understood that on arrival in Egypt the telegraphists will be stationed at Cairo and Assouan, and at relay-stations between these places.

MANCHESTER.—Privates A. Stevens and F. Shipway left for Egypt on the 14th inst. About sixty of their fellow-workmen and a number of friends were at the station to bid them farewell. They were both in the 24th Middlesex, and also in the Army Reserve. Having volunteered for service in Egypt, the authorities selected them.

ARRIVAL OF SIR WILLIAM THOMSON IN AMERICA.

SIR WILLIAM THOMSON, the great English scientist, arrived in New York on the steamer *Servia* on the 18th. He is well known by repute and by his writings to all our readers. His main contributions to science have been made between 1850 and the present time. They consist of papers on "The Distribution of Electricity in Spherical Conductors," "Electro-dynamic Properties of Heat," "Thermal Effects of Fluids in Motion," "Mathematical Theory of Electricity," "Rigidity of the Earth," "Determination of a Ship's Place at Sea from Observations of Altitudes," "Approach Caused by Vibration," and of other scientific subjects. He is also the inventor of the mirror galvanometer and the siphon recorder.

In 1866, on the completion of the Atlantic cable, he was knighted and presented with the freedom of the City of Glasgow. The Universities of Glasgow, Dublin, Cambridge, Edinburgh, and Oxford subsequently conferred upon him the honorary degree of Doctor of Laws. He is also a Fellow of the Royal Societies of London and Edinburgh, and received from the former the Royal Medal, and from the latter the Keith Prize. In 1871 he was President of the British Association, which met in Edinburgh, and in 1872 of the Geological Society, which met in Glasgow. In 1877 he was appointed Foreign Associate by the Paris Academy of Sciences, and in 1881 presided over the meeting of the Mathematical and Physical Sections held in York. The latest appointment held by him was that of British Commissioner for the Electrical Exhibition held at Vienna in 1883. He was in this country in 1876.

Sir William's visit to this country is for the purpose of attending the Congress of Electricians, which will be held in September at Philadelphia. At present he is the guest of Mr. Cyrus Field.

The subjoined is part of an interview with Sir William Thomson. "Has it ever struck you, Sir William, that it would be advisable to have distinct professorships of electricity and magnetism established in the leading schools and universities?"

"That is a good idea, sir; and it might well be carried out as far as possible. Some universities have such a professorship, but not

all. To lecture fittingly on electricity and magnetism a man should be thoroughly grounded in most of the other sciences, and that is the reason, I presume, why a single professor is sometimes required to give instruction on all the modern sciences. The world, however, is rapidly recognising the fact that most of the great modern inventions are due to electricity, and that it is going to be 'the science of the future,' and it is certain that every year its study will be more insisted on by all nations."

"How long do you intend to remain here, Sir William?"

"Until November. I go to Montreal at the close of this month to preside over the mathematical section of the British Association. My main duties will be to introduce Lord Rayleigh, who has been appointed President of the Association, and to deliver an address entitled 'Step Toward a Kinetic Theory of Matter.' The choice of Lord Rayleigh as President is very significant, as he is by far the ablest mathematician in England. By a 'kinetic theory of matter' I mean a theory which maintains that all the properties of matter are merely attributes of motion. After leaving Montreal I go to Johns Hopkins University to deliver a course of lectures on higher physical mathematics. After that I keep a few other engagements, and return home in November to resume work at the University of Glasgow."

"What scientific work are you engaged in at present?"

"I am inventing some measuring instruments which ought to be of some practical use. I am also engaged in reprinting my lectures. The most curious, though not, perhaps, the most important, of my inventions is the siphon recorder, which has worked something of a revolution in telegraphy."—*Electrical World* (New York).

THE PHILADELPHIA ELECTRICAL EXHIBITION.

BY OUR SPECIAL CORRESPONDENT.

PHILADELPHIA, in point of population the second city of the States, and in size the first, seems to be the chosen spot for all great expositions. The Quaker City, or the City of Brotherly Love (as William Penn called it), bears a greater resemblance to an English city than any other town in this country, and is a delightful place of residence; its long, straight streets, with handsome stores and mansions, protected on each side by tall trees of splendid foliage, giving a picturesque appearance, which delights the eye of the visitor, and impresses him with the excellence of the city building-plans, which are adopted throughout the States, and which originated in the brain of our honoured countryman, William Penn. With a population less than that of New York—viz., 900,000, Philadelphia has 60,000 more houses. The poorest of the poor are scarcely compelled to live in quarters too small for them, and every mechanic can have a house to himself on payment of a moderate rental.

It has 15,000 miles of streets and roads, beneath which run 140,000 miles of sewers and 600 miles of gas-mains. There are 420 miles of street railways (train lines), and an indescribable assortment of telegraph-poles, which detract considerably from the otherwise excellent arrangements of the city. The size of the city is 23 miles long by about 5 or 6 broad, having an area of about 130 square miles. The New Yorkers are jealous of their Quaker rival, and, in order to throw contempt upon it, they call it the "Great American Village," but, from the above statement, your readers will be able to form some idea of its right to such a title. I am, however, digressing, and your readers will say there is nothing electrical about roads, sewers, or tramcars.

THE ELECTRICAL EXHIBITION BUILDING.

The building is constructed of wood and iron, covered with glass, its dimensions being 283 ft. by 160 ft. square. At each of the four corners there is a tower 60 ft. high, from which an excellent view of the city is obtained. Adjoining, and connected to the exhibition by a covered archway, is the old Pennsylvania Railway Station, now in disuse, a portion of which is devoted as restaurant and café, another part being used as the lecture-room. A stage has also been erected for the "German orchestra," which, at stated times, "discourses sweet music."

THE OPENING.

The Exhibition was opened on the 2nd inst. by Mr. Smith, the Mayor of Philadelphia, who paid a high tribute to the Franklin Institute of Philadelphia, through whose liberality the Exhibition has been inaugurated. Benjamin Franklin, the Philadelphian, to whose efforts electricians owe so much, he having discovered the identity of the electric current 132 years ago, was referred to in eloquent terms. Upwards of 8,000 persons attended the opening ceremony, but, to their disappointment, the show was an exhibition

of incompleteness and disorder. Scores of the exhibits had not arrived, and those which had were, in many instances, out of working order, therefore of little or no interest to spectators. Even at the time of writing, the Exhibition is far from complete, and, apparently, will not be in full swing for three or four days. In consequence, therefore, description is limited; but in any circumstances it would be impossible to render a fair idea of the interesting appliances in one or even two letters. A rule has been laid down that all exhibits must have some connection with electricity. Consequently, American ingenuity has been brought to task. One exhibitor, with a Heliotellus or Kindergarten toy states in his pamphlet that "it had to be moved by electricity before it could find a place in the Franklin Institute Exhibition." He undoubtedly has an arrangement by which his orrery is controlled by electricity, but when describing it, as he has no means by which he can produce the necessary effect, he disconnects the electromotive power, using his hands to revolve the toy, but when he concludes his description he returns to obedience and allows electricity to take a turn. Another man exhibits an incubator for hatching eggs, the heat being automatically regulated by an electrical apparatus.

THE GREAT FOUNTAIN on the ground floor of the main building is one of the most brilliant spectacles of all. In the centre of a very large basin stands a cone-shaped rockery, upon which jets of water, springing from the flower-rimmed edge of the basin, are directed, the water being sent with sufficient force to cause a spray to encircle the rock. The jets of water surrounding the edge of the basin are lighted by lamps of various colours, so contrived that the water will retain the light within itself, instead of diffusing it through the air, giving each jet, as it curves across the basin, the appearance of a rope of coloured light; and, as the water is dashed in sprays against the rock, it breaks into all the prismatic colours. In this manner the lower portion is illumined, but the grandest effect is produced when the playing fountain directs its sprays upwards from the apex of the rockwork to a great height, the falling sprays changing their colour at short intervals, rendering the *tout ensemble* one of the most magnificent and, at present, the most admired of all the wonderful sights.

PRINTING A PAPER BY ELECTRICITY.—As indicative of the enterprise and success of the *Electrical World*, I may mention that during the current month that paper will be printed by electricity. In a conversation with Mr. Stamp, the business manager for Mr. Johnson, I learned that this innovation entailed very heavy expense; but, judging by the number of papers sold, it is not likely to be an unprofitable undertaking. Great crowds surround the machinery as it rolls out each sheet, and the curiosity-seekers are eager to obtain one for 10 cents. A small "Daft" motor is employed to run the machinery, and it is somewhat surprising to see what power is obtained from it.

Another great novelty, which, next to the fountain, attracts the sightseers most, is Roosevelt's Electrical Organ. At a distance from the organ the keyboard is located, the latter resembling an ordinary American parlour or church organ, so far as the manual and pedals are concerned. The tones are rendered clearly, and are of great volume, but to what practical use such an expensive arrangement may be put I have not yet discovered. I overheard a gentleman say that it would be admirably suited to encourage laziness, giving a church organist the opportunity of performing his duties at home, and, to make matters more complete, telephones might be run to church members' houses, leaving the parson to address empty pews! This idea is good enough in a pecuniary sense, obviating the trouble of a collection.

The American District Telegraph Company exhibit some clever applications of electricity to systems of fire and burglar alarms—one of the latter consisting of an apparently frail box, full of furs and ornaments, which is made burglar-proof by being lined throughout with a cloth, into which copper wires are woven, being so arranged that the door cannot be opened, nor the slightest puncture made in the woodwork without a wire being touched or severed, and a battery connection made. Another clever device for a burglar-alarm is Applegate's Invisible Electric Alarm Matting. The matting is made of strips of very light wood, small, flat springs being interspersed at a distance of 7 in. or 8 in. from each other, acting as contacts. The matting serves as a padding for a carpet, and may be fixed anywhere. The moment it is trodden upon connection is made, no matter which of the contact springs is touched. In the circular distributed by the exhibitor, it states "We care not if we never sell," therefore, giving it credit for a practicable idea, besides being useful and ingenious, it is the most independent burglar-alarm in the market, and is the only one I know of that was not made to sell!

In my next, I shall refer to the electric lights, which, in a few days, will be completed.

AMERICUS.

Philadelphia, Sept. 8, 1884.

OUR ELECTRICAL INDUSTRIES.

MESSES. SPAGNOLETTI & CROOKES.

WHO has not heard of the father of the senior partner of this firm, Mr. C. E. Spagnoletti, Vice-President of the Society of Telegraphic Engineers and Electricians, and Member of the Institute of Civil Engineers, the respected engineer and superintendent of the G.W.R. telegraphs, and the justly-celebrated inventor of the safest and most simple block-signalling apparatus ever contrived? Looking back a quarter of a century, we can see Mr. Spagnoletti in the same position he now holds on the Great Western Railway; but the extent of his authority was limited compared with what it is at the present moment. In those days the G.W.R. main line terminated at Bristol. The grand old broad-gauge engines were running daily, and we can still conjure up in our mind's eye the showy "Lord of the Isles," with its brass bands glittering in the sun; the "Prometheus," the "Abbot," and the "Wizard," driven for so many years by Hill, the father of the telegraph clerk who threw himself out of his bedroom window while in the delirium of fever. The snug signal-boxes we now see so plentifully scattered over all the great railway systems were not dreamt of. Signalmen had to be content with a sentry-box, with only sufficient room for a hard seat, warmed by a coke fire made in a "devil," which was frequently put out by a heavy shower of rain. The points were all on the ground at a short distance from the sentry-boxes, and it was possible for any ruffian to get rid of the signalman at a lonely junction, and cause a catastrophe. In the year 1858 a poor signalman was frozen to death one night at a junction not a great distance from Bath; and the driver of the next goods train, finding the signal against him, had to get off his engine and hold the points over while the fireman ran the "goods" on to the branch line. At that period all trains were signalled by telegraph clerks, for Mr. Spagnoletti had not then invented his beautiful block-signalling instrument. Reflecting over old times, we cannot help alluding to the G.W.R. Telegraph Staff, and the wholesome dread the clerks had of their superintendent. Mr. Spagnoletti had to answer to an exacting directorate, and, although he appeared to all who knew him well as an extremely mild and amiable gentleman, he was nevertheless a regular stickler for duty. The majority of the clerks were young lads, fresh from school, at the time of their appointment. Before they could be sent to a station they had to go before that "awful board" at Paddington, and a scene something like the following was generally enacted:—

Enter Mr. Spagnoletti with a small youth.

Chairman: Well, Mr. Spagnoletti, is this the boy?

Mr. S.: Yes.

Chairman: Is he a good boy?

Mr. S.: Yes, I believe so.

Chairman (sternly, to youth): You won't smoke, eh?

Boy: No, sir!

Chairman (with a withering look): Or chew tobacco?

Boy (trembling): No, sir!

Chairman: That will do, Mr. Spagnoletti.

The lad was then "appointed," and sent off to a country station a day or two afterwards. We think the chairman might have added:—"You won't disconnect the wires of your instrument when you want to shirk your work? You won't go to sleep when you are on night duty, and let a station call you four hours with a D.G. (danger message)? You mustn't run the platelayers' trolley out of the siding in the night when the mail train is due, or go for rides in the guard's van when you are on duty." These questions might have been far more appropriate than "Do you smoke? or do you chew tobacco?" It was customary for Mr. Spagnoletti, in those days, to take periodical journeys down the line to inspect the offices and ascertain how things were going on. How he used to be watched at Paddington! The clerk who saw him enter his first-class compartment of the down-train would immediately call Reading and say "Spag. in train." When the unsuspecting Superintendent entered the R.G. office with his usual query, "Well, how are you getting on here?" everything would be in apple-pie order, and each clerk would be doing something. The instant the train left Reading, Didcot would receive the same message, "Spag. in train," and so on, until Bristol was reached. One unlucky day Mr. Spagnoletti left the train at Slough, or some station where the train did not usually stop; entering the telegraph office he looked at the needles, and to his amazement he read, "Look out, Spag. is in coming train!"

When the Bristol and Exeter, the South Wales, the Oxford, Worcester, and Wolverhampton, and the South and North Devon systems amalgamated, Mr. Spagnoletti's sphere widened. In addition to his multifarious duties, he found time to invent, and then his latent talents blossomed forth. His electric fire-alarm is now well known, and his block-signalling instrument is extensively used in this country.

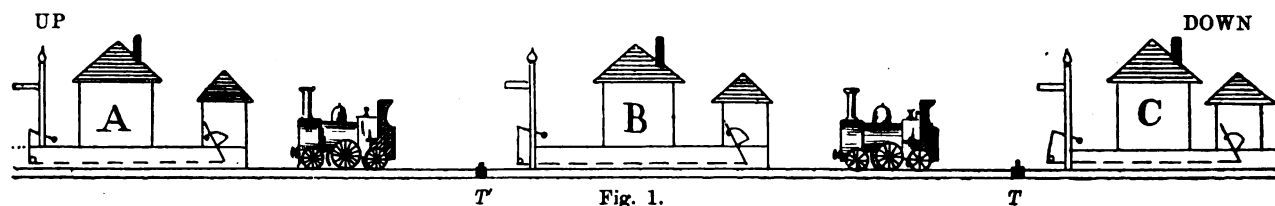


Fig. 1.

The father of the junior partner is no less a person than the celebrated physicist, Professor William Crookes, F.R.S., Editor and proprietor of the *Chemical News*, and Editor of the *Quarterly Journal of Science*. Professor Crookes's experiments on molecular physics have earned him a world-wide reputation. In 1880 the French Académie des Sciences bestowed on him an extraordinary prize of 3,000 francs and a gold medal in recognition of his discoveries in molecular physics and radiant matter. His contributions to electrical science are of great value to the profession. The jurors at the French International Exhibition of Electricity declared "that none of the systems of incandescent lamps would have succeeded had it not been for these extreme vacua which Professor Crookes has taught us to manage."

Professor Crookes was a great friend of the illustrious Faraday, whose charming lectures on *The Chemical History of a Candle* and *The Various Forces of Nature* he had the honour to edit.

Messrs. Spagnoletti & Crookes, the sons of these two eminently scientific men, have recently purchased the works and business of Messrs. Griffiths & Co., late of Reading and Queen Anne's-gate, London. The factory has been removed to Adelaide-road, Shepherd's Bush, London, where a large number of skilled artisans are employed making telegraph apparatus of all kinds, Spagnoletti's fire-alarms, block-signalling instruments, batteries of every description, including Barnett's Secondary Battery. Judging from the animated appearance of the various workshops on the occasion of our visit, this firm will soon hold a leading position in the electrical world. The most interesting contrivance we inspected was Mr. C. E. Spagnoletti's Patent Electric Locking Apparatus. In our illustration of this valuable invention, A, B, C (Fig. 1) represent three stations on a line of railway.

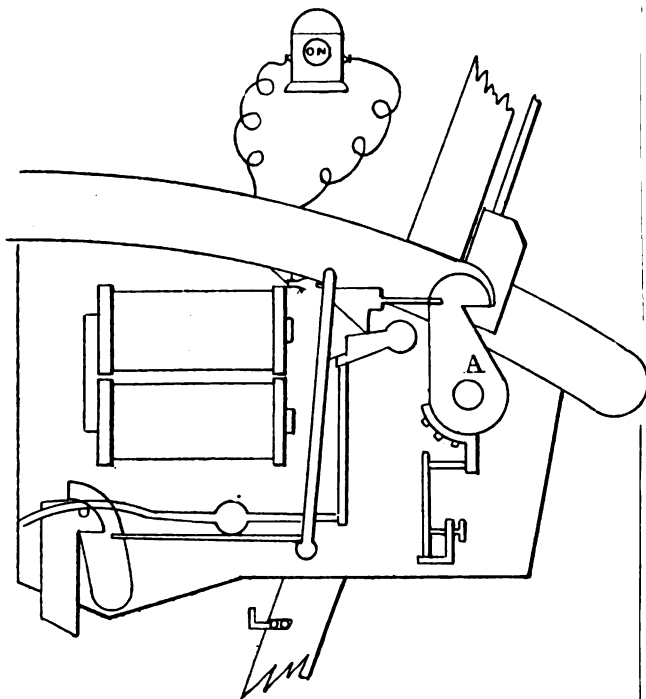


Fig. 2.

Fig. 2 is the lock which is fixed to the quadrant, between which the signal lever slides; the knuckle of the lever is slotted so that when the signal is at danger the catch A remains in the slot of the knuckle, which prevents the signalman from lifting the knuckle out of the notch of the quadrant preparatory to taking down the signal. There is a small indicator connected to the signal-lock which shows when the lock is on or off. Referring to Fig. 1, the

signal for an up-train starting from station C, is unlocked by station B (thus the station in advance always unlocks the starting signal at the station in the rear), and the signalman at station B, having accepted a train from station C, by unlocking his starting signal-lever, cannot again unlock C's starting signal for another train to enter the section between C and B until the previous train has

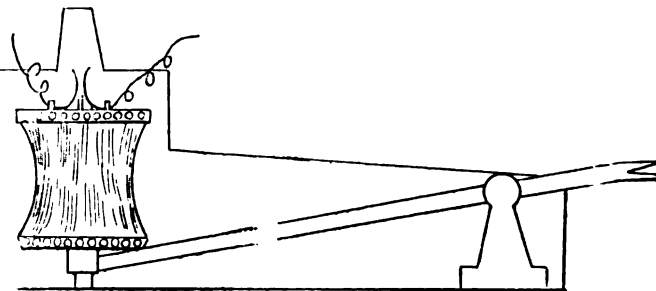


Fig. 3.

passed the treadle (T) placed the other side of station B, which resets the apparatus contained in Fig. 4, and joins up the line wire connecting the instrument Fig. 4, station B, with the lever-lock at station C, Fig. 2. The treadle is shown in Fig. 3.

Fig. 4 consists of an indicator showing what condition the line is in from the station in the rear, with bell topped, P, plunger, which must be pressed, to take the lock off the starting signal at the station in the rear, and, unless line clear is shown on the instrument, the signalman cannot take the lock off.

The two indications on this instrument are "Line clear" and "Train on line." When "Train on line" is showing, the line wire is severed, and no signal can be given with this apparatus, and the lock cannot be taken off. As soon as the train, which has started from station C, has passed over T treadle, the other side of station B, the plunger instrument shows line clear, and by this action joins up the line wire again, which enables the signalman at B to take the lock off the starting signal at station C for

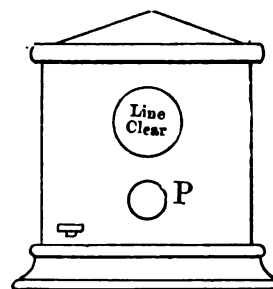


Fig. 4.

another train to proceed. Single lines can be worked as securely as double lines with this system, preventing trains meeting or following one another on the same section. This system is in use on the Great Western Railway, Metropolitan Railway, District Railway, Great Northern Railway, and South-Eastern Railway, and is invaluable for working quick traffic railways, as it renders the sections perfectly safe, and it is thus impossible for signalmen to allow two trains on the same section.

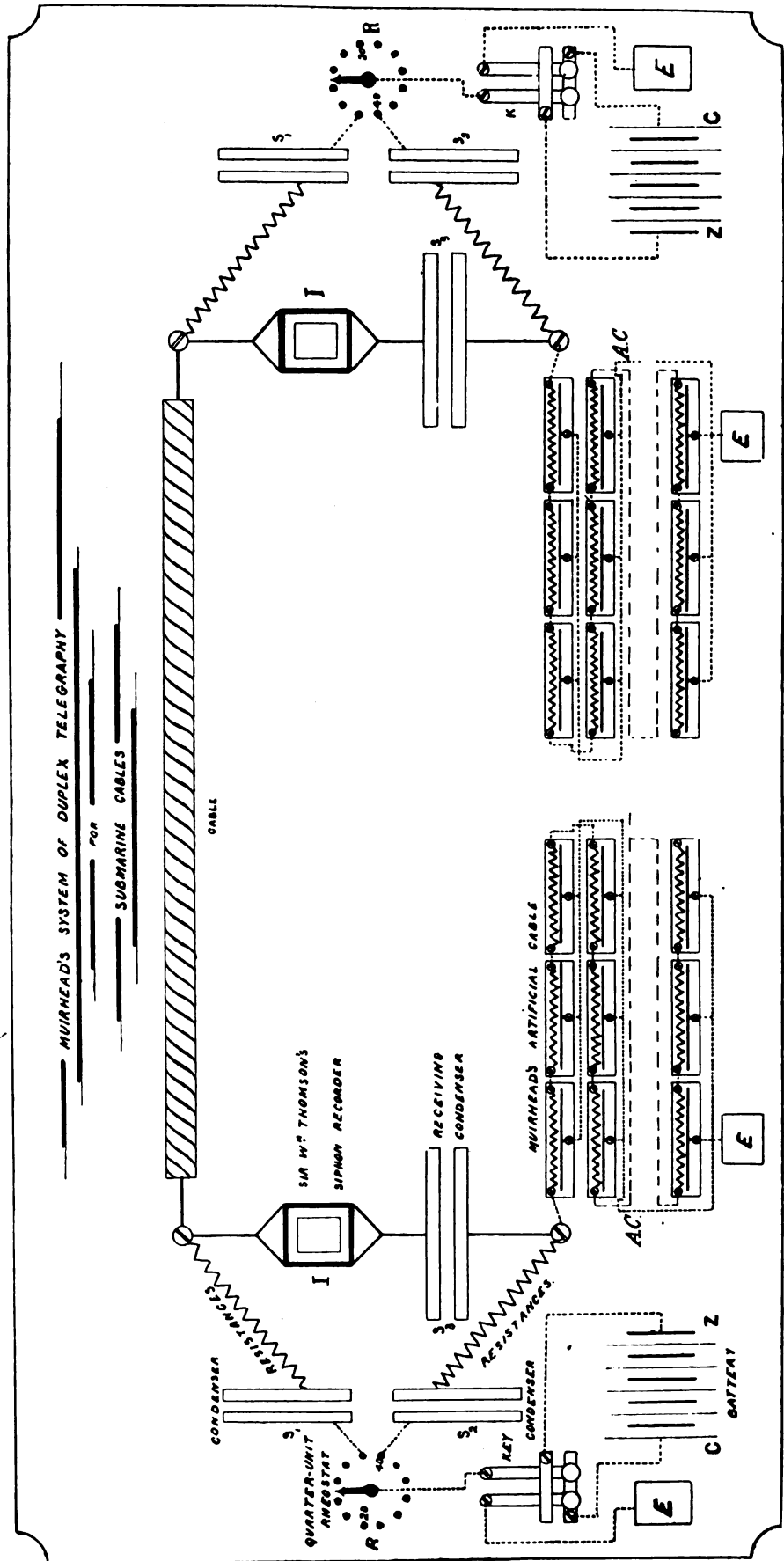
As Messrs. Spagnoletti & Crookes are the sole manufacturers of this system of interlocking, we shall not be surprised to learn shortly that our leading railways will keep their works going for some time to come making and fitting up the electric locking apparatus. The two principals ought to command a large share of electrical engineering contracts. Their names are "towers of strength," and if the mantles of the fathers have fallen upon the sons, success is certain.

THE NEW ATLANTIC CABLES.

DR. MUIRHEAD'S SYSTEM OF DUPLEXING.

At the present moment, when all the arrangements for working the Bennett-Mackay cables are nearly completed, a self-explanatory plan of Dr. Muirhead's system of duplexing submarine cables will, we feel certain, be most acceptable to our scientific friends. Dr. Muirhead, whose labours in the kindred sciences of chemistry and electricity have made him famous on both sides of the Atlantic, was a student at University College, London, when he discovered the art of making condensers on a principle unknown even to the "great" Varley. The story goes that Mr. John Muirhead was one day complaining to his brother about a number of condensers that had gone wrong, and the young student, who was passionately devoted to chemistry, expressed a desire to see one of the bad condensers. Mr. John Muirhead complied with his brother's request, and the youth, aided by his chemical knowledge, immediately discovered that the paraffin wax had crystallised, and crystallisation was fatal to perfect insulation. A remedy flashed across young Muirhead's mind, and he declared that he would make better condensers than either his brother or the illustrious Varley. Mr. John was shocked at the audacity of this stripling of seventeen, and ridiculed the idea. Make better condensers than Varley? IMPOSSIBLE! Young Muirhead was not to be crushed even by the man who had first introduced the condenser. He knew he was right. The chemist came to the aid of the electrician, and the result was that Master Muirhead was as good as his word. Better condensers were made, the speed of submarine signalling was increased, and the young student turned his attention to electricity as well as to chemistry—benefiting the public and telegraph companies thereby. Dr. Muirhead's latest scientific achievement is the building up of an artificial cable for duplex working. Many of our readers are well acquainted with duplex telegraphy as applied to land lines. In the differential principle now in use in this country, it is only necessary to make an artificial line so far as the resistance is concerned. Let us suppose that the resistance of a wire from London to Leicester is 2,000 ohms., then the resistance of the compensation circuit, or artificial line, must also equal 2,000 ohms. But in submarine working, the inductive capacity, as well as the resistance of the cable has to be studied. To understand this inductive capacity, the student must read attentively the excellent papers on "Ocean Telegraphy," now being published in this journal.

In Dr. Muirhead's system of duplexing submarine cables, the resistance and inductive capacities are combined. "The inductive resistances are composed of a number of plates of tinfoil and paper, similar



in construction to ordinary condensers, but with this exception: that whereas in a condenser the sheets of tinfoil are alike in the inductive resistance, each alternate sheet of tinfoil is cut into a gridiron pattern, making a continuous strip of tinfoil; a number of these are placed alternately with plain sheets of tinfoil, interspersed with paraffined paper; the continuous strips are joined alternately together, so as to make one continuous strip—which strip represents the conductor of the cable—and these strips are so regulated in their width that the capacity of the condenser, joined by the strips and plain plates of tinfoil, exactly correspond to the capacity of an equal length of cable represented by the resistance of the strips. The whole of these artificial cables were made by the eminent firm of telegraph engineers, Messrs. Latimer Clark, Muirhead, & Co., of Westminster, London.

Dr. Muirhead is now in Canso, Nova Scotia, superintending the fixing and adjusting of his apparatus. We wish him a safe voyage home again, and we hope he will receive some recognition of his labours while he is still young and able to enjoy his well-earned laurels.

AMERICAN TELEGRAPHS.

IN this country an operator's salary varies, being governed to a certain extent by location. For instance, an operator worth 75 dols. per month in New York, Chicago, or any western city, would probably not be able to command more than 65 or 70 dols. in Philadelphia or Boston, the cost of living in the former cities being proportionately higher than in the latter. Taking Philadelphia for comparison: the highest salary paid to a Morse operator is £16 per month. In Philadelphia, the cheapest, nicest, and most English city in the States, a single man can board for £1 per week; a suit of clothes, worth wearing, costs £8; but boots, hats, and linen are quite as cheap as in England. I estimate that £78 per annum is sufficient to pay for living, two suits of clothes, two pairs of boots, two hats, and all necessaries, leaving £114 for the reserve fund, which very few trouble about. The cost of living and obtaining necessaries is certainly not so high as most English operators imagine; but those who indulge in recreation and pleasure cannot save much, in consequence of the expenses connected with a day's pleasure. In the first place, there is the loss of pay; and what goes in "incidental expenses" is alarming. You cannot open your mouth under five cents (2½d.), and every time a thimbleful of whiskey is indulged in fivepence disappears, and, of course, telegraph operators do often take a few whiskies when "on pleasure bent." In all cities, except Philadelphia and Boston, boarding costs £1. 8s. per week, wearing apparel being about the same price everywhere. I believe the average salary throughout the States might be struck at £12 per month. From this your readers will be able to form some idea of the value of an operator's salary here, although it is a difficult task to make an accurate comparison. It would be still more difficult to compare a married man's salary, but comfortable five-roomed houses in Philadelphia rent for £2. 15s. per month, all taxes paid. In comparing the actual value of pay in this country it must not be forgotten that we have nine hours duty and no vacation. Therefore, assuming that a £16 operator takes a fortnight's vacation, and allowing four weeks longer time on duty (313 hours), we deduct £16, the imaginary reserve fund is reduced to £90.

An English operator on 50s. per week, with an annual vacation, is not quite so well off, but his vacation can be taken at half the expense of an American operator, railway travelling and enjoyment being very abnormal items here. AMERICUS.

A FAST-SENDING CONTEST IN AMERICA.

A PRIZE contest for fast telegraphic transmission took place, on Aug. 17, in the Western Union Telegraph Company's building. The prizes were three in number—the first a gold medal, the second a silver medal, and the third a decorated telegraph key. They were given by J. H. Bunnell & Co., of New York, and the only conditions were that the Morse steel lever key should be the one used. The prizes were for "clearness of character and speed combined." The judges of the contest were J. H. Dwight, night force manager, W. B. Waycott, cable manager, and E. F. Howell, chief operator, all of Western Union. The affair was in charge of Mr. F. Catlin, chief operator.

At eleven o'clock, when the contest began, over one hundred leading operators and telegraph managers were present. On a printed slip was the work to be done. This consisted of 500 words,

15 periods, and 4 commas, in all 2,368 characters, as published in the *Operator* of Aug. 15. The messages were sent on a local circuit. There were ten contestants, all of whom did remarkable work, and at one o'clock the contest was finished. Shortly afterward the judges announced their decision, which was as follows:—First prize: W. L. Waugh, "superior" work, each letter and character perfect; time, 11m. 27s. Second prize: W. M. Gibson, "good" work; time 11m. 3s. Third prize: F. J. Kihm, "fair" work; time 10m. 32s. It is notable that not one of the winners is a Western Union man, Waugh belonging to the Commercial Telegram Company Stock Exchange; Gibson to the Bankers and Merchants' Stock Exchange, and Kihm to the United Press Association.

The names of the other contestants, with their time, are as follows:—J. W. Roloson, 10m. 10s.; L. E. Liddy, 11m. 58s.; M. J. Doran, 11m. 32s.; W. A. Hennessy, 11m. 51s.; E. Delaney, 11m. 52s.; Harry Ziegler, 12m. 29s.; P. J. Byrne, 13m. 50s.

Roloson's time of 10m. 10s. is the most remarkable on record, but his work was too indistinct and unreadable to obtain a prize. He is an operator of the Bankers' and Merchants' Company, and with coaching will be a most formidable opponent. The prizes are quite handsome. The gold one is a bar from which hangs a shield-shaped pendant, on which are the name and date of the contest, and in the centre the design of a hand holding the lightning. The silver one is a bar to which hangs a round medal, the top of which is cut out, and in its place stands out the same design as the gold one contains.—*Electrical World* (New York).

WEST LONDON SCHOOL OF TELEGRAPHY AND ELECTRICAL ENGINEERING.

MONTHLY COMPETITIVE EXAMINATIONS.

COMMERCIAL DIVISION.

COMPETITIVE EXAMINATION (SOUNDER INSTRUMENT: SENDING AND RECEIVING).—*First Pupil*: Miss E. Read, Park-lane, Ashted, Surrey.

COMPETITIVE EXAMINATION (MORSE PRINTER INSTRUMENT: SENDING AND RECEIVING).—*First Pupil*: Miss Sarah Walkington, 73, Dock-street, East, Monkwearmouth, Sunderland.

COMPETITIVE EXAMINATION (OFFICE DUTIES).—*First Pupil*: Mr. Gerald Lane, 1, Sefton-street, Southport-lane.

COMPETITIVE EXAMINATION (SINGLE-NEEDLE INSTRUMENT: SENDING AND RECEIVING).—*First Pupil*: Miss Eliza Read, Park-lane, Ashted, Surrey.

ENGINEERING DIVISION.

TELEGRAPH ENGINEERING.—Subject: The Wheatstone Bridge in Theory and Practice.—*First Pupil*: Mr. J. E. Hewes, Post-office, Coalville, Leicester.

BIRTH.—On Tuesday, Aug. 12, the wife of D. O'Keeffe, Esq., telegraph superintendent at Limerick, of a son.

THE TELEGRAPH IN SIAM.—The "Telegraph Guide for the Kingdom of Siam," published by the Siamese Post and Telegraph authorities for the use of officials and the public, contains, in the first place, the Royal decree opening the telegraph line between Bangkok and Kapong Prak, in the Province of Phratabong, for public traffic. The line has been erected by the Minister of Posts and Telegraph Banupantuwongse (whose complete name is Somsetch Phra Chow Nong Yah Toe Chowfah Bhanurangse Swangwongse Krom Hluang Bhanupantuwongse Woradej). There are at present ten telegraph stations, of which six are intended for international traffic, while four serve exclusively for inland messages. The stations are open from 7 to 10.30 A.M., and from 3 to 5 p.m. Government telegrams are accepted at any time. This guide also contains the regulations of the service, the first part of which refers to the inland traffic, while the second consists of the rules of the International Telegraph Service (London Revision, 1879). The charge for messages in Siam is one fuang per word, without any extra charge. The limit of a word is ten letters. Every message must contain at least eight words, or else the same charge is made. Messages are delivered free of charge to a distance of five English miles from the telegraph station. The Siamese post-office has adopted the system of abridged addresses, and those wishing to benefit by it have to pay eight tikals (about £1) per annum, or a lump sum of 40 tikals (£5). Any change of the abridged address costs 5 tikals (12s. 6d.). The Siamese Government has already given notice of its adhesion to the International Telegraph Convention, and as soon as this is officially settled, one of the few remaining gaps in the telegraphy of the world will be filled up.—*Electrical Review* (New York).

Editorial Notes.

IN answer to many urgent appeals from various parts of the United Kingdom, we have decided to give from time to time highly-finished diagrams and illustrations of the latest and most interesting electrical inventions. With the new volume will commence a series of popular articles entitled "The Telegraph Engineer." These papers will contain plans of electrical testing and telegraph apparatus. Operators who wish to learn how to trace the current through their instruments will find "The Telegraph Engineer" a true friend in need. We have obtained possession of a valuable set of drawings, illustrating all the important connections in a large telegraph office, dealing with simplex, duplex, and quadruplex working. In brief, it will be our object to make THE TELEGRAPHIST the popular electrical journal of this country, and we call upon our old friends and staunch supporters to aid us in our endeavours to instruct and elevate the rising generation of British telegraphists.

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IN our last issue, our American correspondent gave a glowing account of the Phelps Printer, and said, in conclusion:—"Mr. Preece saw it in New York under unfavourable circumstances; but if he could see it now, daily working at the rate of sixty words a minute, he would consider the matter." Mr. Preece is now in America, and we dare say that the eminent Government electrician will be on the look-out for novelties. It is astonishing to hear of a type-printing instrument running a whole day without the type-wheel getting out of adjustment. Old U.K. men will wonder at this, for the type-wheels of the Hughes instruments were more often out of adjustment than otherwise.

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THE greatest living electrician, Sir William Thomson, has met with a hearty welcome in Canada—and no wonder, for electricians owe more to Sir William than any other physicist we could name. When the inventor of the Mirror and Syphon Recorder makes his appearance at the Philadelphia Electrical Exhibition he will, we feel certain, receive a perfect ovation. The Yankees know how to appreciate genius; they do not consider nationality. Any man of genius is welcomed in America, be he English, French, German, or Hottentot. We are not quite so enthusiastic as our transatlantic brethren, but we do not underrate American talent. The names of Morse, Field, Hughes, Stearns, Bell, and Edison are as familiar in England as they are in their own country. Perhaps America has not produced many philosophers like Faraday, Helmholtz, Tyndall, and others we could name, but her practical men may be numbered by hundreds. If a Yankee has an idea, he likes to put it in practice at once; he is not content to read a paper and leave it for some one else to work out his theories; he is a true Baconian, reasoning by induction, and always on the look-out for the practical applications of the sciences. We have the greatest admiration for the inventive genius of America, and we like to think that, although separated by a great ocean, we are one people, speaking one language, and happily united in one common bond of friendship and brotherhood.

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MR. FAWCETT has replied to the provincial clerks' memorial, and he refuses to grant their petition. As the leading provincial papers have thoroughly ventilated this question, we can only add that we are grieved to learn the result of the strong appeal which has been made for justice; and we echo the sentiments of the *Liverpool Express* in its denunciation of Mr. Fawcett's reply as being vague and evasive. We print it below.

SUNDAY DUTY IN THE PROVINCES.—MR. FAWCETT'S REPLY.—The Postmaster-General has read carefully the memorial signed by certain telegraphists, dated Aug. 10, 1884, which amounts in effect to an application for higher rates of pay than those fixed upon after the most careful consideration in 1881. The memorial contains no new fact which was unknown to the Postmaster-General at the date when he fixed the rates for provincial post-offices to include remuneration for two hours' Sunday duty. Sunday work in the Post-office in London has always been the exception, and therefore all work which is done on Sundays by persons borne on the London establishments is paid for as overtime, the rate of pay not having been fixed to include this. The position of those employed in provincial post-offices with regard to Sunday duty has been considerably improved by the revision of 1881. Under these circumstances, Mr. Fawcett regrets that he is unable to accede to the request contained in the memorial.

Literary Notes.

The Electrician's Pocket Book. (E. HOSPITALIER.) Translated, with additions, by Gordon Wigan, M.A. (Cassell & Co., Limited.)—This is a translation of Hospitalier's "Formulaire Pratique de l'Electricien," and we can safely recommend the book to our readers, for both translator and publisher have done their work well. Five shillings, the amount charged for this capital pocket-book, is really a nominal sum, when we take into consideration the mass of valuable information therein contained. The first part deals with definitions, first principles, and general laws. In the second part, the units of electrical measurement are treated in a comprehensive and exhaustive manner. Part three introduces the student to lucid descriptions of measuring instruments, and methods of measurement, while in the fourth part is to be found a great deal of practical information, including the applications of electricity, and experimental results. Several pages are devoted to electric telegraphy, and the telephone has not been neglected. The diagrams are beautifully clear, and the nice limp, but durable, binding and red edges strongly recommend the volume to the busy engineer who wants a book that will bend and not break—a *vade mecum* that will not show the impressions of the practical man's thumb and finger every time he opens its pages.

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Magnetism.—From Messrs. W. & R. Chambers we have received Part I. of an excellent little book on "Magnetism," by H. C. Tarn, Lecturer on Physics, Mathematics, and Navigation. This manual is adapted to meet the requirements of the Science and Art Department, and we congratulate the author on his style, which is simple without being unscientific. To quote from the preface, Mr. Tarn says:—"A good teacher should make his subject so clear that the most backward of his pupils should understand it, and so interesting that the most forward should listen attentively." The book before us is both "clear" and "interesting," and its price (6d.) ought to insure it a large sale amongst telegraphists and amateur electricians.

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The Electrical Engineer.—Our attention has been drawn to a publication dignified by the name of the *Electrical Engineer*, but, judging from some of its contents, we venture to suggest that the *Electrical Imbecile* would be a far more appropriate title. We are firm believers in popular scientific articles, but we draw the line at such drivelling nonsense as we find in the papers entitled "Electricity for Children." Here is a specimen:—"Learned men say that when the Daniell cell gets to work, the zinc from the strip of zinc is used in KICKING out the hydrogen from the sulphuric acid, and when the hydrogen is kicked out it in turn kicks out the copper from the sulphate of copper, and as the copper so kicked out has nothing to kick in turn, it goes and clings closely to the strip of copper." Learned men talk like that, do they? Let us hope, for the sake of the dignity of science, that they are not to be found outside the walls of Bedlam. Here is another specimen of electricity for the nursery:—"What were you doing with that putty this morning when Nellie was crying? 'I only stuck her doll's face into it to make a face the other way up.'" Then there is more about the kicking. Query—does the author belong to Wigan?—and Nellie, Bessie, and Alice seem highly interested. In our experience we have sometimes found it a hard task to make grown-up men grasp theoretical problems; but nowhere outside the "Electrical Engineer's Mythical Nursery" have we heard of babies lisping chemical formulae and lecturing on the electro-deposition of metals. This rubbish would not be allowed a place in *Little Folks* or *Chatterbox*; why, then, is it forced into the pages of a journal sent to practical engineers and manufacturing electricians? If the *Electrical Engineer* is short of padding, he had better use his scissors and paste, and not insult his *clientèle* with such rubbish as "Electricity for Children."

A HEALTHY PLACE FOR TELEGRAPHISTS.—The following official notice is posted in the Siamese railway stations:—"The Minister of Posts and Telegraphs hereby informs the public that the British India Government has given notice to the effect that their portion of the line between Bangkok and Tavoy will be closed during the next rainy season on account of the extreme mortality among their officials. The Siamese portion of this line being, however, in the same good condition as before, will be kept open for public use between Bangkok and Pong Sakee, the boundary near the border of the British Burman territory, without interruption, during the time the British portion is closed. Notice will be given whenever the British India telegraph administration will be in a position to re-open their portion of this line."

Metropolitan Items.

THE CENTRAL TELEGRAPH OFFICE, LONDON.

I MADE two mistakes last month. Firstly, about the learners; and secondly, about the dining club. I cheerfully retract both. As regards the dining club, my presumption in hinting it indicated some signs of improvement met with its righteous reward. Five minutes after our Journal had been in circulation, I was besieged by furious T.S. diners, who one and all, with an unanimity positively touching, demanded if I had quite lost my senses. I apologise. As I feared, it was, after all, only an accident.

MESSRS. PARISH, Tomkins, Lankstead, Hopgood, and Tee, are the "chosen tribe" going (perhaps by this time gone) to Egypt. The selection is a very judicious one. Good luck to them, and a safe return.

THE T.S. annual sports took place on Saturday, September 6. The weather was very depressing, but in spite of the rain there was a really good attendance, and an enjoyable afternoon was spent. All the winners are too well known to need printing here. The meeting was in every way a success. The only dark spot on the horizon was due to the absence of the great favourite, Mr. R. Greenwood. His numerous admirers had thoughtfully subscribed amongst themselves a sufficient sum to purchase a handsome present for him, wherewith to cement the kindly feeling entertained for him, and as a slight recognition of his many endearing qualities. His non-appearance was universally felt.—*T.S. Correspt.*

THE P.O. VOLUNTEERS.—During the late camp of instruction of the 24th Middlesex (Post Office) Rifle Volunteers at Aldershot, which extended from Sept. 9 to 16th, those members of the Field Telegraph Company who were enlisted in the "First Class Army Reserve" about three months since, went through a short course of instruction in laying cable and fixing up air lines. On the Monday they had the pleasure of seeing a detachment of the First Division Telegraph Battalion Royal Engineers lay a cable and also erect an air line. On the succeeding four days the Reserve men did the practical work under the supervision of non-commissioned officers of the R.E. The air line was "bound" at every second, and "stayed" at every fourth pole, the distance between the poles being 70 yards. This was more for practice, as the R.E.'s only bind the fourth and stay the eighth poles. The cable line was either "poled" across or "buried" about 6 inches when crossings obstructed the laying of the cable along the roadside. The parties were changed daily, so that the men were enabled to get a knowledge of both lines. It may be here mentioned that the above division of Royal Engineers put up an air line three miles in length (less 170 yards) in the Long Walk, Windsor Park, which took them only one hour to erect.

DEATH OF AN OLD T.S. CLERK.—Mr. E. A. Fusedale, who left the "Central" for the West Indies shortly before Christmas, was struck down with yellow fever on August 5th. After lingering until Sunday, the 10th, he expired. He was quite unconscious on the day of his death.

HAMMERSMITH.

WE deeply regret to have to announce the death of Mr. W. J. Christmas, a respected telegraphist of this office. Mr. Christmas, who was thirty years of age, died of consumption on Sunday, the 14th of September. He had been in the service about thirteen years.

PADDINGTON.

TELEGRAPH TEMPERANCE SOCIETY.—On Thursday morning the second contingent of this society went for their annual excursion to Pangbourne, a similar number (about 70) having been to the same place the previous week. The weather being all that could be desired, a delightful day was spent in the woods, fields, and on the Thames, the river between Pangbourne and Goring being gay with boats full of merry lads in Telegraph uniform, or the more attractive dress of the now well-known band of the institute. The large party was amply catered for by Mr. and Mrs. Clowes, of the "Bear" coffee palace, outside of which, after tea, the band (conducted by Mr. Cullum) played a selection of music, attracting a large audience, not only of villagers, but several of the *élite* of Pangbourne. On leaving for the railway-station every boy received a gift of money from Lady Donaldson, of Bere Court, to whose liberality the society and temperance work generally is greatly indebted.

THE TELEGRAPHIST ON THE "KANGAROO."

MR. W. FIELDER, of the Central Telegraph Office, London, has had the honour of winning the first race in London on the "Kangaroo Safety" bicycle, made by Messrs. Hilman, Herbert, & Cooper, of Coventry, and Holborn-viaduct, London. Mr. Fielder used to

ride a 56-in. bicycle, and at last year's sports he was thrown from his big machine, and rendered unconscious for 8½ hours through concussion of the brain. He very wisely gave up riding 56-in. bicycles, and this year tried his fortunes on a "Kangaroo," the big wheel of which is only 36 in. high, hence it is very safe to ride. The first race (one mile) was easily won by Mr. Fielder, and he came in second in the five-mile handicap. Referring to the second race, Mr. Fielder says: "It will be seen, upon reference to the sporting papers, that my heat was the quickest by nine seconds, and the final heat in the one mile was thirteen seconds quicker than any other heats excepting mine. The first prize in the one mile bicycle race was a handsome marble clock, given by Mr. H. Goy, of Leadenhall-street," who advertises in the TELEGRAPHIST. I ought to have been first in the five-mile race instead of second; but there were twelve on the track, and it was very baulking to know how matters stood. I allowed Mr. Reading to pass me by 30 yards before I knew he was first, and then I only found out by asking if he had to pass me again before being first, when they said, 'No; you are second. Go on!' But it was too late. I could not pull up the lost distance in the remaining two laps. The third man was 200 yards behind me, therefore, you see, Mr. Reading and I ran away from the ten others." We are pleased to learn that Mr. Fielder has decided to enter for the 100-mile Kangaroo Race, which is to come off on Saturday, the 27th inst. (Sept.) The first prize offered by the manufacturers is a gold chronograph, worth fifty guineas, and a gold medal. In our next issue we hope to record Mr. Fielder as the winner of this splendid prize.

Provincial Telegraph Offices.

BIRMINGHAM.

THE winter term of the Turner Science Classes was commenced on Wednesday, September 10, and was marked by the attendance of the Postmaster, Mr. Baker, Mr. Sullivan, and Mr. Haslam. After speeches by Mr. Turner and the Postmaster, the class on Electricity and Magnetism took its first sitting.

BELFAST.

WE have to record the marriage of Mr. William Smyth and Miss McKenzie, both of this office. Mrs. Smyth was very popular, and she carries into her new sphere the hearty good wishes of the entire staff. It is with a feeling of pleasure, not unmixed with regret, that we announce the well-deserved promotion of Mr. Edward Hayes (First Class), of this office, to the Inspectorship (Engineering Department) of the North-Western District (Ireland). Derry is the centre of his district, where he will reside in the room of Mr. T. Doyle, who has recently received the Postmastership of Wexford.

DURHAM (N. E. R.)

THREE important patents have been applied for by Mr. W. E. Irish, electrical engineer, of Sunderland. They are (1) for a system of receiving and automatically recording articulate speech and other sounds transmitted telegraphically, telephonically, or otherwise, by the aid of electricity; (2), patents for telephone transmitters or circuit interrupters for transmitting speech and other sounds; (3), for a new and greatly-improved telephone receiver. Our knowledge is confined to a perusal of the official notices of the receipt of the applications at the Patent-office. If Mr. Irish is able to record sound signs so that they may be read by compositors or be conveniently written by hand, we are on the eve of another electrical revolution.

EDINBURGH.

THE PRESS WORK OF THE MIDLOTHIAN CAMPAIGN.—Apart from the eagerness which we felt, in common with the rest of the community, to hear what Mr. Gladstone had to say at this important juncture of the nation's history, his visit had, naturally, a special interest to the staff here, involving, as it was sure to do, plenty of overtime and hard work. Nor was this expectation unrealised. During the week of Mr. Gladstone's stay a vast amount of press work was dealt with. The climax was reached on Monday, Sept. 1, on which night no less than 117,000 words were handed in, and, as some of the reports had to be sent on two, three, and even four circuits, the actual number of words passed through the twenty-one transmitters which were employed for the special work amounted to 427,000. The speed of the transmitters averaged nearly 200 words per minute, notwithstanding that on several circuits a few

offices—in one case as many as seven—were reading YQ. This was certainly the biggest night's work ever done in EH, and it is said to exceed anything done at any office out of TS. It is gratifying to be able to state that the arrangements as to the grouping of the circuits, the supervising of the reports, and the apportioning to each individual of his special share of the work, were so complete and so well carried out, that everything went smoothly, the work being finished about 11 p.m., shortly after the last of the "copy" was handed it. It was a veritable triumph of law and order, and it was felt that if a still greater call should ever be made on the resources of the office the call will not be made in vain.

INTER-OFFICE SHOOTING MATCH.—This annual match between EH and GW took place at Nethill Ranges, near Glasgow, and resulted in a victory for the former. The shots who represented Edinburgh are very warm in their accounts of the reception and entertainment they met with while in Glasgow. It is understood that the next match will take place at the Braid Hills, near Edinburgh.

GLASGOW.

The competitions in connection with the Swimming Club took place in the Kennedy-street Baths. The card contained five items, and proceedings commenced with the 250 yards race, for which event four took to the water. Results:—W. J. Dickson, 1; W. Malcolm, 2; W. S. MacDonald, 3. 125 yards race.—J. MacDonald, sen., 1; D. MacPhail, 2; J. Cook, 3; five swam for this event. MacDonald securing first place by a couple of yards, a touch between second and third. Other three events remain to be competed for, details of which will appear in our next.

The shooting-match between the E.H. and G.W. offices resulted in favour of the Edinburgh team by 27 points. Conditions—seven rounds at 200 and 500 yards, one sighting shot at each distance. Mr. A. Harper was the winner of the cup.

EXCHANGE.—Miss E. Spencer, of the Glasgow staff, with Miss J. Colegate, of Edinburgh.

APPOINTMENT.—Mr. J. Stewart has been appointed to this office.

MANCHESTER.

On August 30 a number of the Manchester staff journeyed to Liverpool by the 2 p.m. train to play the return game at cricket with their L.V. *confères*. The game was finished without the slight, resulting, as was anticipated, in a clear win for the L.V. men, the scores being:—L.V., 72; M.R., 47. We must not, however, overlook the fact that the M.R. staff were but indifferently represented, three of their best cricketers being unable to attend from ill-health; but even if they had been fully represented, they would, without a doubt, have had to put in all they knew to have beaten the team pitted against them. The visitors were, after the match, most hospitably entertained by their opponents, and about 120 sat down to a sumptuous repast at the Compton Hotel.

PORTSMOUTH.

The first quarterly meeting of the members of the Sick Fund is to be held during the month, for the purpose of determining the amount of benefit which it will be possible to grant, and other matters of detail. It has met with unqualified success so far, there being upwards of seventy members.

The various transports engaged for the conveyance of boats, &c., for the Nile expedition, have each brought their quota of work.

Our staff had the pleasure of waving adieux to the telegraph detachments who embarked here. Good business is evidently anticipated, as the volunteer party from T.S. and other offices, who go out under the charge of Sergt. Strevens, R.E., take out several sets of complete Wheatstone equipment, so that they may look forward to a lively time withal. Let's hope they will all return to recount their *doubtful* deeds of how they *slipped* into the beggars, and *punched* them in the true English style. No one can come up to a telegraphist for a good imaginary description.

TELEGRAPHY BY SOUND.—One day in May, 1847, while an operator in the Albany office was receiving from Utica a reply to an inquiry about a train, the paper in his receiving instrument suddenly stopped, and he lost the words then coming. Another operator, the late W. O. Buell, of Troy, sitting near at the time, said: "He says the nine o'clock train arrived on time." How Buell knew what Utica said was a mystery, even to himself, but he had simply done what all operators now do—read by sound. This is one of the earliest cases on record of sound reading. Mr. Ten Eyck, of the *Evening Journal*, who was present, made it the subject of an article so interesting that it was extensively copied in Europe.—*Reed's "History of the Telegraph in America."*

Cable Companies.

ANGLO-AMERICAN.

CRICKET CLUB.—At Valencia, on the 9th inst., the above club closed the cricket season by a dinner to its members, followed by a *soirée dansante*. The superintendent of the station, Mr. J. Graves, presided at the dinner, and after due justice had been done to the sumptuous repast, he proposed "The Health of the President of the Club" (Mr. H. Weaver), which was heartily drunk, and in responding to the toast of his own health Mr. Graves referred to the work done during the past season, which had been but little—the least, in fact, that the club had ever done in any season since its first establishment in 1869, for during the present year only three public matches had been played—two with the Direct U.S. Co.'s staff, both of which were lost, and one with Caberciveen, which was won—owing in a great measure to the impossibility of getting an opposing team to accept their challenges in the district. He regretted to say that the Anglo Club was never so weak as at the present time, as it had suffered a great many losses of late. They had lost their energetic and competent captain, Mr. W. S. Pilfold (Teneriffe), Messrs. J. B. Smith and A. Hodgson (Suez), Mr. E. Hurdas (La Palmas), Mr. G. Butcher (Panama), Mr. D. Herbert (Rio de Janeiro), Messrs. W. Jones, L. Carmichael A. Holt, and F. C. Milner (Waterville); whilst the Direct U.S. Club had lost their excellent bat and bowler, Mr. C. Wilson (Cadiz) and Mr. H. Potter. It would thus be seen that the strength of the Anglo Club of last year was now scattered far and wide, and the remaining members had rather a hard task to make up a field. With such a thinning of its ranks, it was not to be wondered at that they suffered defeat in their matches with the Direct U.S. Club, assisted as they were by O'Leary, an outsider, but an excellent pupil of Mr. C. Wilson, who has turned out a capital bowler, as they all too well knew; however, he looked forward to the time when their strength would be recruited, and that, notwithstanding the ill success of the past season, they would be able to show their opponents in the near future that they were "cricketers for a that." He concluded by proposing, "The Future Success of the Anglo-American Cricket Club," to which Mr. E. Johnson, the captain, responded. Other toasts having been proposed, and duly responded to, the members adjourned. At 10 p.m. the ladies belonging to the staff assembled for the *soirée*. The ball-room had been, most tastefully decorated for the occasion by the members of the club with flags, evergreens, ferns, and rosettes worked into very pretty devices, the whole artistic display being very creditable. One of the devices was composed of a bat and stumps, and while this was being neatly arranged with ferns and placed several feet from the floor, some one remarked, "You have the bat and stumps, but where is the ball?" A punster replied, "The ball will be below." This was considered at the time to be "a very good hit." During the *soirée* there was no lack of musicians, and a most enjoyable programme was gone through, comprising quadrilles, mazurkas, schottisches, polkas, reels, &c., interspersed with songs and pianoforte solos by both ladies and gentlemen, which having been kept up till the small hours, was then brought to a close, everyone being highly gratified with the entertainment.

COMMERCIAL CABLE COMPANY.

Mr. DICKENSON, D.U.S. Co., Torbay, has been appointed superintendent at Canso. Messrs. Collie, from Anglo Co., Duxbury; Mr. Browne, from P.Q. Co., St. Pierre; and Messrs. Burstall, Paget, and Foden, from D.U.S. Co., Torbay, have also joined at Canso. Mr. J. Potts, from Western Union Co., Canso, has been appointed to the Waterville station.

WESTERN UNION CABLE COMPANY.

SHARP WORK.—On Sept. 10, the result of the St. Leger was handed to the Western Union Telegraph Company, at their office, 21, Royal Exchange, London, at 8.34 p.m., and was transmitted to New York in the short space of *fifteen seconds*. With two transmissions, and the fact of the message having to be transferred from the Morse to the Mirror rooms each time, this would seem impossible; but, nevertheless, this remarkable feat was accomplished. The news agency sending the message had arranged to send the result in an abbreviated form, consequently, only nine letters were used to indicate the first three horses. The race was set for decision at 3.15 p.m.; according to newspaper reports there was nearly a quarter of an hour's delay at the post. The time of the race was 3 min. 14 sec.; therefore, it may safely be said the result was in New York within five minutes after the horses had

passed the post, and certainly several minutes before the crowd assembled on the Royal Exchange flags in London, near the Western Union Office, were made aware of the result.

THE DIRECT CABLE COMPANY.

EFFICIENT and able management is the key to success in all business enterprises, and in none more so than in cable service. The Direct United States Cable Company is an example of this. Splendidly equipped and with ample means behind it, nevertheless to the lynx-eyed and skilled direction of Mr. John W. Fuller, its secretary and traffic manager, it owes that perfection of organisation which has meant profit for its owners, as well as satisfaction to its patrons. That Mr. Fuller has brought his fine executive abilities and notable electrical knowledge to bear, under the still higher leadership of Mr. John Pender, the great cable king, is, perhaps, the ultimate reason of its success. At its six-monthly meeting on July 25, it showed that over 250,000 dols. went to the account of profit for the half-year—a splendid result of great energies unremittingly devoted to the care and prosperity of a great property.—*Morning Journal* (New York).

Correspondence.

To the Editor of the TELEGRAPHIST.

SUNDAY DUTY IN THE PROVINCES.

SIR,—You will doubtless ere this have seen the answer which the Postmaster-General has given to the various petitions sent in last month.

With regard to Mr. Fawcett's reply, the general opinion is that (as the *Liverpool Express* puts it) it is vague and evasive. Mr. F. is only partly right when he says the memorial is practically an application for higher rate of pay. That is so, to the extent that when a clerk works on Sunday and gets paid for it, his pay for that week will certainly be higher than now, but not if he has no Sunday duty. What we wish is that our week should consist of six days, and that when called on to do more, the extra should be paid for.

As to there being no new facts, a most important fact is that, since the revision, he reconsidered the case of the metropolitan clerks; and, although there were no new facts then, he granted them the boon we are now asking for. He gives no reason for not considering Sunday work as exceptional in the provinces, as he says it has always been considered in T.S. Nor does he enter into the question why, if it can be granted to the metropolitan clerks, the military and other exceptions quoted, it could not also be given to us all.

One statement is very questionable—viz., that our position with regard to Sunday duty was considerably improved by the '81 revision. So far as our office is concerned—and I believe it is the same with other large offices—no change whatever took place on this point. Before the revision we worked eight hours of Sunday duty per month without pay: we do so still. The only difference that we can think of is a theoretical one—viz., that they might have asked us to do more than eight hours before without pay, although, as a matter of fact, we were never called upon to do more; whereas now, if we were to do more, it would be paid for as overtime.

This, however is a most exceptional case. It was eight hours without pay before; it is so still, and I leave you to say where the considerable improvement lies.

Hoping you will take up the cudgels on our behalf, I am, Sir, yours truly,

ONE WHO BEGS FOR JUSTICE.

CABLE SERVICE v. POSTAL TELEGRAPHS.

SIR,—Your correspondent "Condenser" gives good advice to those who imagine the cable service to be a telegraphic El Dorado. The life insurance scheme to which he refers is often a superficial advantage, especially in cases of termination of services, when a clerk has paid his premium two or three years. The money is all thrown away, because, in the majority of cases, a clerk cannot afford to pay full premium, and his policy becomes worthless. Then, again, the "pickings" in some companies are often distributed amongst brothers, cousins, and friends of managers and superintendents, notwithstanding the fact that they are incompetent to hold their positions with efficiency.

In such cases, efficient clerks have good reason to regret having left the Postal Service, to endure a term of subordination and uncertainty under a superintendent who has not even an ele-

mentary knowledge of electricity, to say nothing of his official incapacity. So long as this "relationship" bar exists to keep his prospects in glorious uncertainty, the poor clerk, in dread of the private influence that may be used against him in umbrage, continues to perform his duty under a ghostly banner emblematic of the affinity between blood and water. If clerks don't want to risk a practical test as to whether "blood is thicker than water," let them be careful in their choice, or remain in the Postal Service.

CABLELIST.

SIR,—Appointments in cable companies, when held by thoroughly competent men, are certainly not to be compared with those in the postal service. In my last letter to you I did not speak derogatorily of the cable service, as "Il Zingaro" thinks. I addressed you expressly for the purpose of warning incompetent persons from seeking appointments which they are not qualified to hold. I am acquainted with several youths who, after having been in the cable service a very short time, discovered that they had mistaken their vocation. Although they were reckoned good clerks in the P.O., they were in a dilemma when put to circuits kept constantly going with code messages.

Merchants using the cables pay high rates for their messages, and have a right to demand accuracy, and with a view to this the companies have every message checked, and every error, no matter how slight, is recorded against the operator.

"Il Zingaro" says, "The work cannot be harder, as at present we have to work as hard as we possibly can, and in a cable company, or any other service, no one can do more than that." Oh! yes, Mr. Il Zingaro, it is quite possible that the work can be much harder, although all the young men you advise to join the cable companies (your advice is to "any young man") at present work as hard as they can; but that is by no means proof that they are first-class telegraphists. Every clerk has his maximum speed, but the capabilities of different individuals vary very much. The lad who works well and faithfully at some small circuit in the "Met." division thinks himself a splendid clerk, but his supervisor does not think him quite competent for the circuits doing several hundred messages a day. In the cable service there are not a variety of circuits suiting every clerk's abilities, but only two or three; and if the new comer is unable for any of those, it is probable that he may be sorry he severed his connection with the P.O.

Most of the large postal telegraph offices have one or two clerks who resigned, but after a short service with the cable company were glad to resume duty at the old place at a salary much less than that previously received.—Yours, &c.

CONDENSER.

RAILWAY CLERKS.

SIR,—"Durham" very properly points out in your issue of August the value of the "Practical Telegraphist" to both postal and railway clerks, but I cannot agree with all he would appear to infer, viz., the inability shown by railway clerks in testing matters. He should bear in mind that railway clerks have little or no opportunity afforded them to acquire a thorough knowledge of electricity. I believe that very few railway offices are supplied with even a "vertical galvanometer," two or three on the Midland having a "tangent." But even with such little resources at their command, I venture to say that their knowledge is not far below that of the ordinary postal operator. The suggestion of "Railway Clerk" in your last issue is a good one, and worthy of all consideration. It is true the postal telegraphist has decided advantages to those of the railway clerk, but this should surely not be considered as sufficient to keep them so far aloof one from the other. If suggestions of "Railway Clerk" could be carried out, I for one should give it my hearty support, feeling confident that all would be benefited thereby, not forgetting the good old maxim, "Unity is strength."

IRON ROAD.

Answers to Correspondents.

J. C. At Herr Krupp's cannon manufactory at Essen there are forty miles of telegraph wires, thirty-five stations, and fifty-five Morse instruments.—D. L. S. Your extracts in *re* Sunday duty in the provinces arrived too late for insertion.—C. B.'s query, answered by F. E. B., was one of the questions in the Technological Honours paper for 1883.—A. TREGARTHEN (S. Africa). We have sent off by post the "Practical Telegraphist," and copies of Nos. 1 and 3 to 10 of the TELEGRAPHIST (No. 2 is out of print). Your sub. will expire with No. 14.—A. H. A very small battery is used.—AN ATLANTIC CABLE. Not more than four or six cells.

The Telegraphist

A MONTHLY JOURNAL OF

POPULAR ELECTRICAL SCIENCE.

Speed the soft intercourse from soul to soul,
And waft a sigh from Indus to the Pole.—POPE.

LONDON: SATURDAY, NOVEMBER 1, 1884.

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THE TELEPHONE MONOPOLY.

BY THE EDITOR.

NO monopoly in our time has had such a crushing and pernicious effect upon the electrical trade as the purchase of the patent rights of all systems of telephones by the United Telephone Co. Never before, in the history of commercial enterprise, have the eyes of legislation been so effectually bandaged. Public interest must have been totally disregarded when the United Telephone Co. were permitted to claim the exclusive right of disposing of a grand and useful invention; and we marvel why the present Liberal Government can be so *illiberal* as to remain dormant while a few individuals are endeavouring to cripple trade, stifle the spirit of invention, and impose a heavy tax upon all who wish to avail themselves of the joint scientific productions of Bell, Edison, Gower, and Blake. A great many persons are totally ignorant of the course adopted by the United Telephone Co. We will do our best to enlighten them. Octopus-like, this company has been extending its gilded tentacles in all directions until it has at length succeeded in capturing every system of telephone of any practical use. While there was competition and other companies existed, there was hope for the public; but now, unless legislation interferes the United will continue to ride the high horse, defying inventors, shutting up people in gaol, and issuing forth decrees which, although they make the poor mechanic tremble, cannot fail to excite ridicule in the minds of those who know quite as much about right and justice as the "King of the Telephone." The simple facts are these. The United Company having purchased the patent rights of all practically useful telephones, now refuse even to *sell* an instrument. There are thousands of persons who would gladly purchase complete sets of apparatus; but they strongly object to support a monstrous monopoly by paying a high rate of interest for the mere use of Telephones. Does the trade benefit by this monopoly? No! Because the instruments are made by a *Company*, and Holloway Prison stares every manufacturer in the face who presumes to make a set of apparatus. It is one gigantic monopoly—a serious mistake altogether; but for most evils there is a remedy, and we venture to point out to our readers and the general public how this telephonic hydra can be scotched, if not killed.

We should be very sorry to encourage the infringement of any patent. We believe that a man who invents something useful deserves to be well rewarded. We do not think that the law ought to allow the product of a clever man's brains to become common property. History is already crowded with the records of inventors who have gone down to the grave in poverty and wretchedness, while others have fattened upon their creations. Professor Graham Bell is said to be a millionaire, and we do not grudge him one dollar of his wealth. On the contrary, we shall be glad to learn that Edison, Gower, Blake, Gray, and Reis are "electrical Rothschilds"; but we raise our voice against the British Telephonic Octopus, and we now suggest a way for the restoration of honourable competition and the downfall of this monopoly.

Like the monks of the dark ages, who did their best to keep the people in ignorance, the King of the Telephone does not believe in scientific teaching. Only a few days ago he was heard to exclaim, "I do not want the theory of the telephone explained to students. I have refused to lend apparatus to the Professors at Oxford and Cambridge for that very reason." Does his majesty think for one moment that he can stop scientific progress until the patent rights he guards so jealously have expired? Would he like to send to Holloway Gaol Messrs. Preece, Hospitalier, Sprague, Thompson, and others who have dared to write about the telephone? In brief, does he suppose that his views on the subject will meet with anything but derision from the scientific world, and the public, too, when the facts are known?

The way to defeat monopoly is to encourage the study of the telephone in every school and college in the country. Professors need not humiliate themselves by begging the U.T.C. to lend them apparatus for educational purposes. Model telephones in wood can be constructed; cotton substituted for wire. The principle can easily be demonstrated, and liberal prizes might be offered to any person who will study the principles of telephony, and assist in the evolution of an instrument capable of performing the functions of a telephone without infringing any of the patent-rights now held by the U.T.C.

The king of the telephone consoles himself by thinking that it is impossible for a man to invent an instrument which shall steer clear of his claims. There are more things in heaven and earth than are dreamt of in his philosophy. Less than a quarter of a century ago even *scientific* men believed the articulating telephone impossible, but it has long been an established fact. Duplex and Diplex Telegraphy and many more of the so-called *impossibilities* of a few years back, are now quite commonplace realities. As one great scientist passes away another, phoenix-like, takes his place. The army of inventors is not recruited from the aristocracy. The greater portion of the supply is drawn from the artisan-class, and many a mechanical genius has emerged from the corner of an obscure workshop. No student of electrical science, however humble his present position may be, need despair of inventing a new telephone. We shall be pleased to assist our readers with descriptions and diagrams, and we trust that the ugly stories about men being sent to prison for making telephones will not deter those who have an aptitude for invention from studying the means of transmitting articulate sounds by electricity. Our advice to young aspirants for electrical fame is, go in and win. Study the laws of sound and vibratory motion; never mind the threats of the United Telephone Co. The telephone king cannot hurt you if you do not infringe his rights. Do not be "frighted with false fire;" blot the word *impossible* out of your lexicon, leaving it to be uttered only by the executive of the octopus and such like obstacles to scientific progress.

TELEGRAPH INSTRUMENTS AND HOW TO UNDERSTAND THEM.

BY ELEKTRON.

THE SINGLE NEEDLE.

THE Single Needle instrument is now being superseded by the Sounder in the postal telegraph service, but it will be a long while before this excellent system is abandoned by the railway companies of this country. There are many reasons why the Needle cannot be dispensed with. In the first place, it seldom gets out of order, and when a fault does occur it can be easily remedied by any clerk who will take the trouble to follow me in my simple description of the pedal and drop-handle systems. Another great advantage is the ease with which a number of offices can be included in one circuit without the trouble and expense of relays, and I must not forget to mention that very few persons fail to master the manipulation of the Needle, while many have to give up the Sounder in despair. Since I have been requested by a large number of subscribers to resume my papers on "Telegraph Instruments," I believe I shall be satisfying the majority of them by devoting a few columns to the "Single Needle," and I will begin with some remarks on the current and its wonderful effect upon a magnet. If the clerk who has a Needle in his office will take off the case of his instrument and examine the dial, he will find that the indicator needle which taps against the ivory pivots is fastened to the same axis or rod as the curious-shaped inner or magnetic needle—both the magnet and the indicator move together. Now, let the inquiring clerk disconnect the two ends of the coil, taking care to connect the double terminals with the brass "line hook," or he will break the circuit, and prevent other stations working while he is examining his apparatus.

He will find when he has unscrewed and slipped off the two halves

of the coil, that neither the axis nor any part of the needles are in connection with the wires. This is a fact which ought to strike him with admiration. Just reflect for a moment, intelligent reader. The needle which responds so readily to the signals sent by the clerk at the other end of the line, and which would appear to the uninitiated to be in mechanical connection with the handle or tappers, is really electrically *disconnected*! Now, what causes it to deflect? Why does it obey the movement of the pedals? When you press down the right-hand tapper the needle strikes the right-hand pivot, and when you depress the left-hand tapper the needle points to the left. To understand this phenomenon, the clerk who has been curious enough to take his dial off must now pay the strictest attention to the following details. In the second number of the TELEGRAPHIST I explained the law discovered by CErsted, the celebrated Danish Philosopher; I will go a little further and try to make clear by the aid of diagrams why the needle deflects in obedience to the movements of the handles or tappers. The neighbourhood of a current is said to be a magnetic field. Now, when the halves of the coil are in their places, and the ends connected with the double terminals, a current will pass through the fine-insulated wire whenever the pedal is depressed. The inner needle is in the neighbourhood of the current, therefore it is in a magnetic field. To make this clear, let us suppose a current to be flowing along the wire A B (Fig. 1);

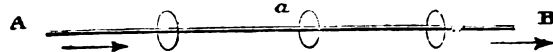


Fig. 1.

every part of that wire is encircled as it were by a magnetic field—that is, the molecules or particles of air become for the time little magnets, and although they are invisible, they exert their influence upon the telegraph needle just as effectually as the familiar lodestone attracts the blade of the schoolboy's knife. To prove this fact it is only necessary to dip the wire (whilst it is in connection with the battery) into some iron filings, and the particles of metal will cluster around it as shown in Fig. 2. Each



Fig. 2.

filing becomes a magnet, because it is in the magnetic field. Our scientific clerk has only to think of the inner magnetic needle of his instrument as a big iron-filing, and he will soon understand why it moves in obedience to the signals or currents sent by the transmitter.

The neighbourhood of the coil is a magnetic field, and the needle is in that field and attracted by the little invisible "air magnets" which surround the wire of the coil.

That eminent authority, Mr. Preece, says, "If a wire (A, B, Fig. 1) at any distance, A a, Fig. 2, were conceived to be surrounded by a ring of little magnets all freely suspended by their centres, they would assume the position shown in the figure with all their N. poles turned in one direction, and all their S. poles in the opposite direction. If their N. poles were free, they would move in a circular path or orbit around the wire in the direction shown."

"Thus, if a magnet" (say the inner needle of the S. N. instrument), "be brought within the neighbourhood of the wire, it will be acted upon by the directive power of these imaginary magnetised molecules, and to place itself at right angles to the wire, and always under the same circumstances in the direction shown by the little magnets *sn, sn, sn*, in Fig. 3."

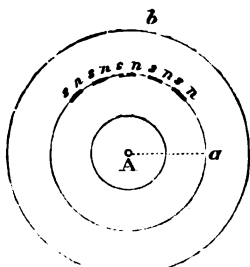


Fig. 3.

In Fig. 1 the current is supposed to be flowing from A to B. If the direction is changed, and it flows from B to A, the polarity of each invisible magnet in the field will be reversed. See Fig. 4.

Hitherto we have only considered the magnetic field produced by

a current flowing through a single wire, A B, Figs 1 and 4. If instead of a coil of many turns of fine wire you had only a single wire in the neighbourhood of the inner needle, the signals would not be readable, even if they were visible, unless great battery

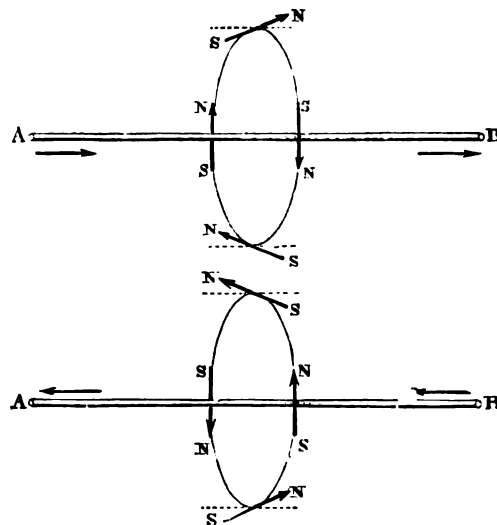


Fig. 4.

power were used. To multiply the effect on the needle we can double the wire, as in Fig. 5, or make a coil of many turns, and the directive force in the magnetic field is increased nearly in proportion to the number of turns. Thus, in a coil of a single-needle instrument the magnetic force is greatly increased, and the needle is deflected so as to make good readable signals with a minimum amount of battery power.

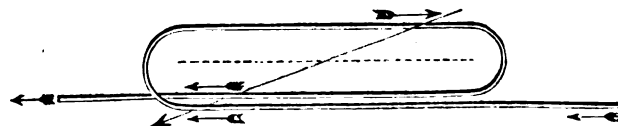


Fig. 5.

How the needle can be made to move to the right or the left, by depressing either the right or left-hand pedal, shall receive due consideration in my next article, which will be illustrated with carefully-executed diagrams.

OUR ELECTRICAL INDUSTRIES.

MR. C. J. SIMMONS AND ELECTRICAL TESTING.

THE grand science of electricity has advanced during the past decade with such marvellous strides that few mathematical instrument makers are able to satisfy the demands of our great electricians. The simple apparatus with which we were content in the early days of telegraphy can only be seen in the show-cases of some museum or in the lumber-room of a superannuated engineer. It is no easy matter to convince the electrical student of the present day that our fathers managed nearly all their testing with an ordinary lineman's galvanometer, and we often provoke a smile when we try to picture the scene of a telegraph clerk looking almost with awe at the engineer's "differential," or vainly endeavouring to guess the use of the rheostat, the coils of which were wound to so many "miles," not "ohms." In those days telegraph companies were not particular about the percentage of error, nor did they trouble themselves very much over "the possible degree of accuracy obtainable." Our esteemed friend Mr. Kempe was then an infant, muling and puling in the nurse's arms, caring more for a bowl of hot milk and a sugar-stick than all the mathematics in the world. But science, ever marching onwards in the search of truth, relegates to the curiosity store every piece of apparatus that is proved to be inaccurate, and the makers are banished with their instruments if they do not care to advance with the times and follow in the wake of the noble army of truth finders. Electrical testing has now attained such a high degree of perfection that only men who have studied the science, can adjust the various measuring instruments with that degree of accuracy which is absolutely necessary to satisfy the modern electrician. Amateurs who gaze upon a rheostat, or mirror galvanometer, through a shop window, can have

no idea of the amount of patient labour bestowed upon those instruments by the maker, and we do not think that we shall be accused of exaggeration when we state that the scientist feels a real affection for the conscientious mathematical instrument maker. Sir William Thomson must have felt sorely the loss of James White of Glasgow, and we could name others who are still mourned by the greatest philosophers of the age.

The subject of this paper, Mr. C. J. Simmons, commenced his career as an architect and civil engineer, and we presume that he received a liberal education before he went out into the world to struggle for the position he has so honourably won. In 1863 his tastes led him to the study of electrical science, and towards the close of that year he entered the well-known firm of philosophical instrument makers, Messrs. Elliott Brothers, of St. Martin's-lane, London. The genial Mr. Becker was then in the zenith of his fame, and his office was the rendezvous of such shining lights as Sir William Thomson, Latimer Clark, Fleeming Jenkin, Charles Hockin, Clerk Maxwell, Sir Charles Wheatstone, Dr. Radcliffe, Professor Clifton, Lord Salisbury, and Lord Lindsay. The relentless hand of Time has since changed the scene, leaving only pleasant memories behind. The Elliott Brothers and Mr. Becker have gone over to the majority, and the firm has passed into other hands.

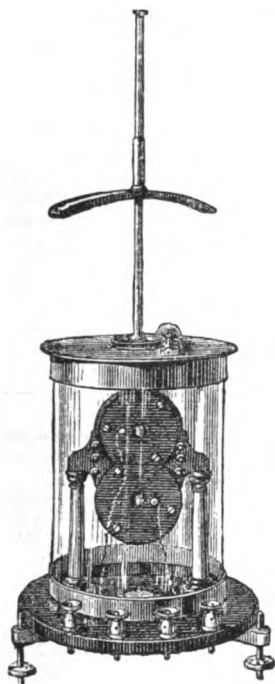


Fig. 1.



Fig. 2.

While Mr. Simmons was graduating with Elliott Bros., he made himself acquainted with the work of nearly every department of the firm; but he was particularly attached to the electrical testing branch. For years he superintended the adjustment and testing of those splendid rheostats, galvanometers, shunts, sliding resistances, and B.A. units, for the manufacture of which Elliott Bros. are so justly famous.

In 1881, Mr. Simmons resigned his post, and commenced business for himself at Volta Works, Kentish Town, where he has turned out some good work for the G.P.O., South-Eastern Railway, and the Indian Government. When we visited his workshops we were so impressed with his high-class testing apparatus, that we gave him a liberal order for instruments, which have more than satisfied us. It is a well-known fact that, if the eminent mathematician of the G.P.O., Mr. H. R. Kempe, will pass an electrical testing instrument, it must be as near perfection as human hands can make it. Now, when we state that Mr. Kempe has spoken in our presence in the most eulogistic terms about Mr. Simmons's work, we think that it would be difficult for any mathematical instrument maker to obtain a higher recommendation. Unfortunately for students with slender purses, good testing instruments are very expensive. It is, we believe, the ambition of every scientific telegraphist to possess a Wheatstone Bridge. To many this beautiful and valuable instrument is little more than a myth. Looking over the pages of an electrical instrument maker's catalogue the student finds

such prices as £30, £36, £50, and closes the book in despair. Now, we are of opinion that a Wheatstone Bridge, quite good enough to satisfy the requirements of the young electrician,

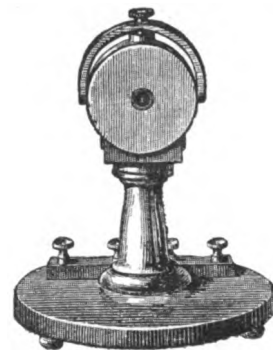


Fig. 4.

Fig. 3.

might be sold for about one-sixth of the lowest price above mentioned. We have urged Mr. Simmons to consider the matter and although that gentleman shakes his head, and talks about the contempt he feels for any but the very highest class of work, we,

think that, after three or four weeks' reflection, he will endorse our views, and we hope to be able to give the price and details of a useful student's "Bridge" in our next issue. The following figures will illustrate some of the beautiful instruments made and adjusted by Mr. Simmons. Fig. 1 shows Sir William Thomson's mirror galvanometer, and known as the glass-cylinder pattern. Fig. 2 is electrically the same as the glass cylinder; but, as submarine telegraphy developed, it was found necessary to make stronger cases, so that the instrument might be handed from one ship to another without fear of damage. This instrument is known as the Submarine Four-Coil Astatic Galvanometer. Fig. 3 shows Sir William Thomson's Marine Reflecting Galvanometer, with an iron case to screen it from external magnetism. Fig. 4 is the "dead

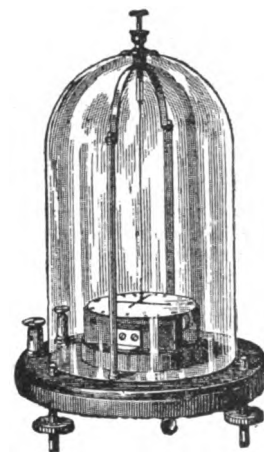


Fig. 5.

beat" speaking-mirror, about which we shall soon learn a good deal from "Old Electric's" excellent papers on "Ocean Telegraphy." Fig. 5 is an ordinary astatic galvanometer under a glass shade; and Fig. 6 shows Latimer Clark's celebrated

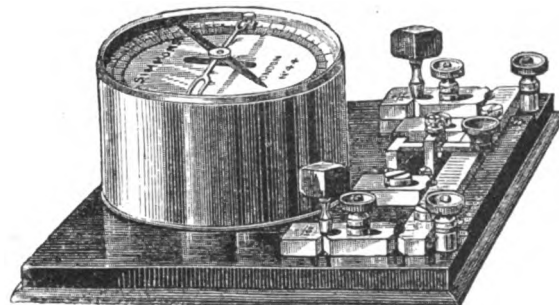


Fig. 6.

differential double-shunt galvanometer—a most useful instrument for general measurements. We have just received from Mr. Simmons a splendid portable galvanometer, wound to 1,517 ohms at 15° cent., the coils of which were made in the following manner:—To get the greatest magnetic effect from a given resistance the wires are "graded," as suggested some time ago by Sir William Thomson,—that is, instead of selecting sufficient wire of a certain diameter to fill the bobbin and give the desired resistance, wires of different diameters are

selected; the finest wire is coiled nearest the needle, and the thickness gradually increased as the end is reached. By this method of building up the resistance we get a greater number of convolutions near the needle. With this galvanometer the slightest difference of potential is shown. With a two-shilling piece and a penny (metals very near in the list), separated by a bit of blotting-paper dipped in pure water, we obtained a deflection of 30 degrees!

OCEAN TELEGRAPHY.

(Continued from p. 133.)

I THINK we have now pretty well gone over the ground of practical telegraphy so far as land-working is concerned. I have dwelt rather longer on this portion of our subject than I intended, but as it is the general process of development experienced by the telegraphist before he can hope to hold any responsible position in the service of an ocean company, I have thought myself justified in taking my young friend through the various preliminary stages which he is expected to be acquainted with as an operator before he can become a candidate for cable service; and this brings us to the border-land of "Ocean Telegraphy."

As long ago as 1842 an attempt was made to transmit a current of electricity through an insulated wire laid under water. Prof. Morse, in October of that year, connected Castle Garden to Governor's Island by means of a submarine wire, and was able to demonstrate to a Committee of the American Institute the possibility of telegraphing under the sea, and Prof. Morse was awarded the gold medal of the Institute upon this occasion as an acknowledgment of his success. On Aug. 10, 1843, he wrote, after further experiments, to the Secretary of the United States Treasury: "The practical inference from the law just elucidated is that a telegraphic communication on my plan may with certainty be established across the Atlantic! Startling as this statement may now seem, the time will come when the project will be realised." The venerable and prophetic Professor lived until April 2, 1872, and reached the patriarchal age of 81 years, and therefore lived to see his prophecy realised, and much more.

It is not, however, my intention to go over the whole history of submarine telegraphy from the time that the Dover and Calais Cable was projected in 1850 by Mr. Brett, up to the present day. If the student cares to follow this branch of the subject, he will find some interesting data in Sabine's "Electric Telegraph," Preece's revised edition of "Noad's Electricity," Clark and Sabine's "Electrical Tables," and Munro and Jamieson's "Pocket-book of Electrical Rules and Tables." From these sources he will find data and dates respecting cables laid from 1851 to nearly the present date.

During the fourteen years which succeeded the prophecy of Professor Morse, short cables had multiplied in all directions, and were working successfully, and it was high time that some steps should be taken towards laying a cable to connect the Old and New Worlds. On the 10th of March, 1854, Mr. Cyrus W. Field and some of his friends resolved to carry out the idea as soon as practicable, and began to work with a will. In the next month "the colonial Government of Newfoundland passed an Act incorporating a company for the establishment of telegraphic communication between the Old World and the New. Shortly afterwards the same Legislature expressed its interest in the enterprise in a very substantial way, by grants of land and subsidy, and by conferring the exclusive right to land a telegraphic line upon the coast under its jurisdiction, extending the entire length of Newfoundland and Labrador." The company, which was called "The New York, Newfoundland, and London Telegraph Company" next obtained a "charter of similar tendency from the Government of Prince Edward's Island, and from the State of Maine; and also secured authority for certain subsidiary operations in Canada, besides getting a ratification and confirmation of its rights from her Majesty's ministers at home."

The company, having appointed Professor Morse their electrician, connected St. John's, Newfoundland, with the British North American lines and the United States, by laying cables across the Straits of Northumberland and the Gulf of St. Lawrence. England was already united to Ireland by cable, and there remained therefore, "only a single gap to be filled in—the basin of the Atlantic itself."

Without pursuing the history of the subject further, (which is hardly the object of these papers), I will merely remark that the necessary capital was raised, contracts were entered into by the Atlantic Telegraph Company with Messrs. Glass, Elliott, & Co., of Greenwich, and Messrs. Newell & Co., of Birkenhead, for the making of some 1,200 miles of cable each. Expeditions were organised for sounding the Atlantic, and a "telegraphic plateau"

was marked out on the charts over which the cable was to be laid between Valentia, Ireland, and Trinity Bay, Newfoundland. The cable was shipped on board the *Niagara* and *Agamemnon*, and the laying of it was attempted in 1857, but failed; the expedition renewed the attempt in 1858, and succeeded on August 5 in joining the old and new worlds, and numerous messages were transmitted through the cable, but, before it was opened for public traffic, it failed, on September 1.

This was a costly experiment, but it showed that Atlantic Telegraphy was practicable, and its temporary success was the foundation of all subsequent "Ocean Telegraphy."

My first experience in working a submarine circuit was gained in the Foreign Gallery at Founders' Court, Lothbury, the lines from which crossed the North Sea from Orfordness to the Hague at Scheveningen, and the difference in speed of working soon became manifest to my observation. A friend and co-worker and I, on a Sunday, in May, 1858, tried to get the lines joined through, section by section, as far as we could eastward, and we succeeded in ultimately reaching Constantinople. The clerk on duty there remarked that he should make it his business to bring the matter to the attention of the Turkish Minister, as it was the first time that they had spoken, *outré Manche*, beyond the Channel. A fortnight later, when we were on duty together again, we succeeded in getting put through, via Berlin, Petersburg, and Moscow, to Kief (Kiev), in Central Russia.

As yet I had had no direct experience with submarine cables, but, in the autumn of 1858, a cable was laid from Portland to Alderney, Guernsey, and Jersey, for the Channel Islands Telegraph Company, and I was appointed to the Jersey station.

The frequent breakages of this cable absorbed more than all the receipts, and it was subsequently abandoned on account of the great expenses involved in repairs. These breakages were, however, of vast use to me, and gave me frequent opportunities of testing for the distances of faults, and having no testing apparatus supplied to the station, I had to make my own—both galvanometer and resistance coils, and having no standard for the latter, I adopted the resistance of one mile of the cable itself as my unit of measurement.

Having no German-silver wire for the purpose, I made my coils of silk-covered copper wire, and, when that was exhausted, I had to utilise some silk-covered iron wire, which I had by me, to finish my set of resistance coils, which were not required to be very large as the cables were short, and I only required them for approximating the distances of breaks in the cable. Rough and home-made as were these instruments, they answered my purpose admirably, and gave me good practice in the absence of better. When the engineer (Mr. W. H. Preece) came with his perfect instruments to corroborate my approximations they were never found to be far astray.

So much does this fact bear out the remarks of Lord Rayleigh in his recent address at Montreal, referred to in the *Times* leader of August 28, 1884, that I cannot forbear quoting his words here: "It seems to me important to discourage too great reliance on the instrument-maker. Much of the best original work has been done with the homeliest appliances, and the endeavour to turn to the best account the means that may be at hand, develops ingenuity and resource more than the most elaborate determinations with ready-made instruments."

My interest in submarine telegraphy increased, and, in May, 1861, I was transferred to England to fill the post of submarine electrician to the Electric and International Telegraph Company on board the old *Monarch*, in which vessel I removed with all my belongings from Jersey to Lowestoft. For a couple of years or so I was "knocking about" the North Sea in the old "tub," picked up what could be got of the old Hague cables between Orfordness and Scheveningen, repaired the Dunwich-Zandvoort cable and traced its route, and also repaired the Irish cable off the Welsh coast in small boats.

On one occasion, when engaged on repairs in the North Sea, having ceased work for the day, and lying by the cable with fires banked up for the night, and steam at very low pressure, all hands turned in for a night's rest, except the second mate and the watch on deck. At about one o'clock in the morning the stentorian voice of Jim Elvish was heard at the companion door calling out—"All hands on deck, here's a vessel right into us." We all hastened on deck in our night attire, just in time to see the jibboom of a large Norwegian, timber-laden vessel in full sail, bound south, sweeping over our quarter, and the hull within a few feet of our vessel. The "man at the wheel," who must not at any time be "spoken to," was, or rather had been, fast asleep for the want of some one to speak to; and, but for his having been awake by the powerful voice of our friend "Jim," we should have been sent to the bottom; as it was, he woke him just in time for him to alter the vessel's course and clear us, almost shaving the paddle-box of our poor old *Monarch*.

As he passed, the "man at the wheel" coolly asked, "How does the Galloper lightship bear?" Jim replied, "If I had a lump of coal in my hand I would show you." In a few minutes we lost sight of the Norwegian in the darkness of the night, and we all went down to our beds to finish our sleep as best we could after such an incident.

Having tested the New Lowestoft-Zandvoort cable during its manufacture at Greenwich, for the Electric and International Telegraph Company, in 1862, I was appointed in May, 1864, as assistant to Mr. C. F. Varley, the chief electrician, to test the New Atlantic cable, then about to be made, during its manufacture for the Atlantic Telegraph Company, that unfortunate Company having, after unparalleled efforts, at last succeeded in raising the necessary new capital for renewing the attempt to lay a cable across the Atlantic, in 1865.

The result of this expedition is too well known to require any detailed explanation from me. Its failure in mid-ocean, and the vain endeavours of the *Great Eastern* to recover the broken end, are matters of history accessible to all. This was followed by another expedition in 1866, under the newly-formed Anglo-American Telegraph Company, when the galaxy of talent on board the great ship succeeded in accomplishing the double object of laying the 1866 cable, and recovering and completing the 1865 cable.

A full account of the 1865 expedition will be found in the *Atlantic Telegraph*, by W. H. Russell, LL.D., illustrated by Robert Dudley; and a very interesting account was published in the *Illustrated London News* on Aug. 5, 1865, with illustrations.

The effects of the double success of the 1866 expedition was soon seen in the formation of other Companies for laying cables across other oceans than the Atlantic: and now, as is well known, ocean cables are stretched in every direction, and the "girdle of the earth" is completed, except the still "missing link" across the Pacific, between San Francisco and China. OLD ELECTRIC.

(To be continued.)

THE PHILADELPHIA ELECTRICAL EXHIBITION.

BY OUR SPECIAL CORRESPONDENT.

SINCE the year 1857 such intensely hot weather during the month of September has not been experienced in this country. On several days the sweltering heat had its effect upon the Exhibition receipts, would-be visitors being too busily engaged at home, or in the coolest possible retreat, mopping away the outcome of abnormal warmth, and in many instances the effects of iced water. The British scientists now in Philadelphia will have gathered unfavourable ideas of this climate, and it will be a difficult matter to convince them that there was nothing extraordinary in the excessive solar freaks of this month. In one of our local papers it was reported that one of the scientists had stated that he had lived in Asia, but that country was never so unbearable as this! Well, 100 deg. and 103 deg. in the shade throws out all chances of bodily comfort, and makes one perspire to think of moving, and perspiring sinners may be pardoned if they are occasionally uncomplimentary in their criticisms upon our weather prophet, who had the audacity to attempt to cool them by predicting a cold wave, which was burnt up before it passed the hog district out West.

On Tuesday and Thursday evenings of each week there are lectures delivered in the "Lecture Hall," a building once used as a railway waiting-room, but no more adapted to its present use than a Quakers' meeting-house is to theatrical performances. Its acoustic properties are deplorably bad, and those who occupy back seats are no wiser when they go out than when they enter, but much sadder.

Professor Forbes, of London, was announced to unburden himself of some weighty matter respecting dynamos, but, to the great disappointment of a very large assembly, he did not appear on the first Tuesday. For twenty minutes the people sat patiently, and apparently ready for swallowing any amount of science; gazing at the walls, on which were painted large maps of the world, showing cable routes (or, as they pronounce it in America, "rowts"), and in another part a copy of Cully's statement of lengths of cables and their electro-static capacity, &c.

When Professor Snyder (American), considered we had had sufficient time to learn the above statistics, he stepped forward to tell us that he would endeavour to "relieve the absurdity of the occasion" by informing us of the absence of the lecturer.

At a meeting of the National Conference of Electricians, the discussion upon storage batteries was entered into by Mr. Preece, of London, who, we all know, is an enthusiastic electrician. I saw a report in one of the papers which stated that in his home he uses

electricity wherever it can be applied, lighting each tiny room of his daughter's small doll's-house with fairy incandescent globes, and in many other ways too unimportant to mention. In speaking of the relative cost of gas and electricity, he said, "It is almost sinful for us to estimate cost in securing electricity. When you want a luxury, you don't want to compare it with an ordinary thing. When you want a delicious port, you don't want to compare it with a mere claret [and in parenthesis he might have added, "You mustn't come to America for it!"]; or when you search for a pheasant or a partridge, you don't want to place its cost by the side of an old cock that *crowed* before Peter." (He ought to have said "rooster," being in America, as the antiquated form is not considered in good taste here.)

Mr. Preece's happy style created hilarity, and some broadly hinted that he was not only an epicure but a sybarite. Subsequently, during the discussion which followed the reading of a paper on "Telephony" by Mr. Lockwood, Mr. Preece criticised warmly, and said Mr. Lockwood had left many things unsaid that he ought to have said, and which were well-known in England. Mr. Lockwood, in reply, said he had done so deliberately, because they were so well known among the eminent men present that it would have been simply a waste of time, and in this respect he certainly showed his ignorance of G.P.O. red tape; but he was not short of tape when he said, "I would like to say to the gentlemen of the Conference that, just as the Professor declares that Faraday's treatises on 'Electricity' should be the Bible of electricians, so ought Preece's sayings on the same subject to be collected and added to Faraday's Bible as a kind of New Testament!"—No "B. Q.!"

In my first letter I promised to make a report upon electric lights, and I might give myself an easier task were I to dismiss the subject by stating that we have them *ad nauseum*. There is "so much of a muchness," in consequence of the great number crowded in so small a space, that it becomes a difficult matter to discriminate between the superiority of one over another; and, for any person not versed in this particular science, there is nothing for their powers of criticism but general effect. Of course, if one wanted to study the history of the electric light, he must go back to the great battery of 1813. Sir Humphrey Davy first obtained a light only inferior in intensity to that of the sun, but the waste of his charcoal points was so great that it was practically useless outside the laboratory, and remained a brilliant experiment until thirty years later, when Foucault substituted gas carbon, and was the first to solve the problem of maintaining the adjustment of the carbon points, but by a most complicated process. In the historic section of the Exhibition there are numerous Patent Office models, lent by the Government at Washington. Amongst them is the model of a light patented in England twenty-seven years ago by John Thomas Way, which was probably the forerunner of our more artistic modern systems. Placed side by side with Edison's and others, it is as a half-finished London cab-horse to a Derby winner; but the idea is there, and from this and other similar models, any one interested may learn much. I will endeavour to describe it—not the cab-horse, but Way's light. In a sort of bell-glass resting on a black table are a pipe and a small cup. Two tanks of mercury were provided, and the fluid coursed through a siphon bending upward, under the glass, falling in a slender stream from an orifice in the tube, into the cup, about an inch beneath. The poles were represented by the cup and the tube, and the little jet of mercury completed the circuit, and becoming incandescent, performed the functions of the modern fibre loop. The mercury was to be returned to the tank by a "simple electrical device," which, however, Mr. Way did not describe. Subsequently he improved upon his invention by conveying the mercury through two tubes of chalk, the streams meeting each other in graceful curves; and still later on the pipes were replaced by channels pierced in a solid block of chalk. I could not learn whether this invention was persevered with, but stumbling-blocks against its success must have resulted from the fact that its base prevented the light from shining downwards, to say nothing of the cumbrous machinery. The germ of the successful systems of Edison are to be seen in the production of Blossom and Gardner (Americans) in 1858. It was a short cylinder mounted on a tin tube, a spiral coil of thin platinum wire connecting with the battery. When the current made the circuit, the platinum coil was rapidly heated to incandescence, and the desired illumination produced, but, in consequence of the effect of the air, the wire did not continue incandescent long enough to make the invention of practicable utility. From this it would appear that Edison got over that great difficulty with hermetically-sealed globes, but, after all, Edison's success is probably due to the ingenuity of Blossom and Gardner, and every one knows how clever Edison is as an electrical resurrectionist. There are many other models which nowadays make one smile.

The Brush, Maxim, Swan, Ball (unipolar), Wiston, McTighe, Van

de Poole, Thomson-Houston, and several others are well represented, but none of these, in my humble opinion, can "hold a candle" to Edison for magnificence of effect. Of course, a candle would not show much, but your readers know what I mean by this Scriptural quotation. Edison's parlour is beautifully furnished by a local firm (advertisement for the local firm!). In the centre of the ceiling is a basket of artificial flowers, amongst which are lights of different colours. Near the door, parading the floor, is a nigger (I should say a young gentleman of colour!), who wears a helmet, on the top of which is a small incandescent light, which he can turn off or on at pleasure. To see this "coloured pussen," one would imagine he considers himself equal to the inventor, but he is either too short of modesty or too black to raise a blush over his achievements. Next in grandeur to the Fountain, to which I adverted in my first letter, is the Edison Pyramid, which holds 2,600 globes, red, white, and blue. They are so arranged that the lights appear spirally round the cone. Close at hand is a large commutator, with which the lights are changed. When this wheel-like instrument is revolved rapidly in one direction, the lights seem to be running round the pyramid, chasing each other; but the most interesting effect is produced when the wheel is reversed and changed about rapidly, the sight being beyond my powers of description. It can be better imagined by supposing each of the 2,600 globes to be instantly lighted, and as quickly turned off, all the lights changing colour and position in very rapid succession. This reminds me of a conversation I overheard between one of Edison's men and a "non-electric." The former was growling about the monotony of answering the same questions so often when I casually put in a single one: "How many lights are there on that cone?" The question was not put for any other purpose than to save me the trouble of counting.

"There," said this careworn, disagreeable, self-satisfied anti-monotonist, "I should think I have answered that question a thousand times this evening." He told me for the one thousand and first time, and I retreated, mildly suggesting a poster stating the number. Taking the round of the Exhibition, it is surprising to find that the representatives who know anything about the exhibits are conspicuous by their absence. Such a state of affairs is unsatisfactory to people who want to learn something. AMERICUS.

(To be continued.)

WEST LONDON SCHOOL OF TELEGRAPHY AND ELECTRICAL ENGINEERING.

MONTHLY COMPETITIVE EXAMINATIONS.

COMMERCIAL DIVISION.

SOUNDER INSTRUMENT: SENDING AND RECEIVING.—*First Pupil:* Miss C. Horlock, Grosvenor-wharf, Westminster, S.W.

MORSE PRINTER: SENDING AND RECEIVING.—*First Pupil:* Miss Eliza Read, Ashted, Surrey.

OFFICE DUTIES.—*First Pupil:* Miss E. Darlow, Ramsay, Hants.

SINGLE NEEDLE: SENDING AND RECEIVING.—*First Pupil:* Mr. G. Lane, 1, Sefton-street, Southport, Lancashire. Twenty pupils competed.

ENGINEERING DIVISION.

The next competitive examination for engineering pupils will take place on the 15th of November.

ELECTRICITY AND LOCOMOTION.—The firm of O. Steinbeis, of Rosenheim, Bavaria, has introduced an electric railway in the place of the tramway on which the timber to be cut had hitherto been conveyed to the saw-mill. The necessary electric current is supplied by the extensive water-power connected with the works. The locomotive consists of an ordinary vehicle furnished with a platform; on one side of it there is a second electro-dynamic machine, on the other a mechanism by means of which the great rotary speed is reduced within certain limits. Only one attendant is required to mind the locomotive and the two carriages appended to it. The engine is capable of dragging a load of six tons at a speed of 137 feet 9 inches per minute—which is a very favourable result, seeing that there are a great many curves on this line. In the evening, when there is no traffic on the railway, the electric current is used very profitably, and without involving any additional expense, for lighting the whole of the mill, both inside and out; the extensive water-power is then made use of in the usual way. The question arises whether it would not be possible to produce electric force and light in the same way in other places in which there is a superabundance of hydraulic power.

Editorial Notes.

OUR NEW VOLUME.—With the present issue our first volume will be completed. One year has passed since we appealed to the telegraphic world. We made certain promises, and we believe that we have fulfilled them to the letter. In the first place, we decided to be unlike all other journals devoted to electrical science. The dry-as-dust style has been carefully avoided. No reports of the winding-up of bubble companies have appeared in our columns. Encouragement has been to telegraphists of literary tastes, and, although we must confess that very few sparkling stories have reached us, several of the original contributions we received during the year met with universal approval. While reviewing the contents of our first volume, we must include in the list of literary efforts worthy of special notice "The Telegraphist: a Vindication," by the late Mr. Edward H. Jones, of "T.S."; "Veteran's" Contributions; "Odin's" Sketches of Foreign Telegraphists; "Told by Telegraphy," by A.S.; "Old Electric's" admirable papers on "Ocean Telegraphy;" Paul Changer's clever and humorous sketch, "Dan Dasher's Dilemma;" "Electric Lighting," by F. E. Bunt; and several smart paragraphs sent us from various parts of the country. Our columns have always been open to genuine grievances. The T.S. Dining Club Scandal was thoroughly ventilated, and a considerable amount of space has been given up to the Sunday Duty Question. The scientific papers have been quite free from mathematics; and, from the series of articles on "Our Electrical Industries," the telegraphist has been able to learn a good deal about the manufacture of the beautiful instruments with which he is so familiar. From the ladies we have hitherto complained of a dearth of news; but we are now pleased to state that a very clever fair telegraphist in the provinces has joined our ranks, and, judging from two of her contributions, the letter on "Holiday Exchanges," which appeared in our correspondence columns in August, and the amusing bit of satire to be found under "Social Notes," entitled "Telegraph Learners," in the present issue, we may expect something good from her pen in the future. So much for the past. We must now direct our attention to the coming volume, and the improvements we hope to introduce therein. In the first place, we have decided to make the TELEGRAPHIST an illustrated journal, for we find it next to impossible to instruct students in technical telegraphy without the aid of diagrams. We shall still adhere to our popular descriptive style, and the plan we have mapped out for the next few numbers will include "Ocean Telegraphy," illustrated; a Prize Essay, or Scientific Article; American News by our Special Correspondent (a British telegraphist in the Western Union Telegraph Company's service); Telegraph Instruments and Telegraph Engineering, by Elektron, illustrated; Our Electrical Industries, illustrated; Miscellaneous Items; Literary and Editorial Notes; Provincial Telegraph Offices; Social Notes, including reports of telegraphic suppers, dinners, concerts, presentations, births, marriages, and deaths; Cable Companies; Correspondence; Queries and Answers.

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PRIZE ESSAYS AND SCIENTIFIC ARTICLES.—The proprietors of the TELEGRAPHIST offer a Guinea Prize for the best Essay or Scientific Article on the following subjects:—Female Labour in Government Telegraph Offices, the Universal Battery System, the Future of the Telephone, Electric Lighting by Primary Batteries, How to Discover and Remedy Faults in Quadruplex Apparatus, and the Sixpenny Tariff. The Essays and Articles must be written on one side of the paper, in ink. MSS. written in pencil will be rejected without acknowledgment. No Article or Essay must contain more than 1,200 words.

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IMPORTANT TO CORRESPONDENTS AND CONTRIBUTORS.—The TELEGRAPHIST is made up on the 16th day of each month; therefore all reports and articles received after that date must either stand over until the following month, or take the chance of being rejected. Correspondents are earnestly requested to make their reports as brief as possible. Short pithy paragraphs are always more palatable than pages of pointless verbiage. Several items have been sent in lately written in pencil. We have before remarked that ink is plentiful and cheap enough, and we positively decline to insert communications written in pencil. Post-card notices will also be consigned to the W.P.B.

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OLD COMPANIES MEN.—We shall be pleased to publish each month the names and addresses of old Electric Mag. and U.K. men, who are now scattered all over the globe. Some, we know, are still in the Postal Service, while others are in cable and

railway companies offices. The following is a specimen of the form to be sent to us :—

Name: JOSEPH WARD.—Entered the E. & I. T. C. at Manchester, June, 1854. Transferred to Postal Telegraphs, 1870. Entered the Brazilian Submarine Telegraph Company, 1883. Present Position: Clerk in Charge at ———.

No charge will be made for the publication of these names and addresses.

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RENEWAL OF SUBSCRIPTIONS.—Our friends in postal, railway, and cable telegraph services will oblige the Publishers by sending in their subscriptions as early as convenient. All subscriptions, with few exceptions, expire with the present issue. With the next issue an index of Vol. I. will be presented gratis to every reader, a binding-case will also be ready soon, price 1s. 6d.

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SUNDAY DUTY IN THE PROVINCES.—We are pleased to find that the Sunday duty agitation is likely to be continued until Mr. Fawcett can see the justice of the claims made by provincial telegraphists. The press and the public are unanimous in condemning the decision of the Postmaster-General, and we sincerely hope that the right hon. gentleman will soon grant the petition of the country clerks.

Literary Notes.

Dynamo Electric Machinery. By SYLVANUS P. THOMPSON. (London: E. & F. N. Spon, 16, Charing-cross.)—This is a manual of electro-technics, and we believe it is the only complete work on that particular branch of electrical engineering. The author states in his preface that the volume now before us is caused by a demand for copies of the Cantor Lectures on dynamo-electric machinery, delivered by him before the Society of Arts in the autumn of 1882. These lectures were so favourably received by electricians, that a French translation was soon demanded, and an American edition was published in New York. In referring to the latter, the author sarcastically remarks that, "the cheque, which high authorities assure British authors never fails to accompany an American reprint, has not yet reached this side of the Atlantic." We are rather surprised to learn this, because we know for a fact that the great American publishing firms have dealt liberally with English writers for some time past; indeed, many of them pay better than English publishers. The present volume, though based upon Professor Thompson's lectures, is not a reprint of them. A series of chapters has been added on the mathematical theory of dynamo-electric machines and electric motors. Another section deals with the graphic method of calculation as applied to the characteristic curves of dynamos. Admirable illustrations and bold type add considerably to the value of this excellent book, and we prophesy a rapid sale for the first edition. Electric lighting, although very quiet just at present, is still engaging the attention of eminent electricians, and we shall not be surprised to learn at some early date that public confidence is once more restored, and the real honest work has commenced. To those persons who believe that electricity will supply the light of the future, Professor Thompson's important contribution to the literature of the science will be welcomed and eagerly studied.

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Ferguson's Electricity. (W. & R. Chambers, London and Edinburgh.)—We have very pleasant recollections of this excellent and cheap manual of electricity many years ago, and we welcome the new edition, which has been revised and extended by Professor James Blyth, of Anderson's College, Glasgow. We have no fault to find with this work until we come to the chapters on telegraphy. There we find illustrations of the most primitive forms of apparatus. The Morse Printer instrument is the old embosser form, and the Single Needle will not be recognised by telegraphists of the present day. In the early days of our telegraphic career we met with two or three of the Needle Instruments shown in Ferguson's "Electricity." The Morse Code was not used. The faces were silver-plated, protected by a large glass door. The handles were of brass, and very small compared with those now in use. When Professor Blyth was revising the book, it is a pity he did not seek the assistance of some one who was acquainted with the instruments of the present day. With this exception—and, after all, it is not very detrimental to the work—Ferguson's "Electricity" will be found to be of great assistance to students of electrical science.

The Popular Guide to the Telegraph and Postal Services.—This manual of elementary instruction in telegraph and postal duties will shortly be published. As the book will contain a complete set of postal returns, all accurately filled up and balanced, the demand for copies by telegraph and postal clerks is expected to be very great. The price of the guide, which will be well bound in scarlet cloth, with red edges, is 2s. 6d. per copy. Orders for copies should be sent at once to the publishers, Messrs. Wyman & Sons, 74-6, Great Queen-street, W.C.

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Merry Matches.—Messrs. Wyman & Sons have just issued a new edition of this excellent round game for children. Last winter we had to notice the first appearance of "Merry Matches," and we now have the pleasant task of recording an unprecedented success. Many thousands of packs have been sold in this country during the past twelve months, and the press opinions have been most complimentary to both artist and publisher. It is hardly necessary for us to remark that young people are, as a rule, very fond of pictures, and coloured sketches are to the youthful eye more attractive than plain drawings. Bearing this fact in mind, the artist (who is, we believe, a talented young lady) has made fresh sketches of the characters on the face of the cards, and we must compliment her on a decided improvement. All angularities have been removed, and the colouring adds considerably to the effect these really charming pictures are certain to produce upon the minds of the happy possessor of this amusing and innocent game.

As the winter evenings are drawing in, and our young friends are no longer able to spend much time in out-door recreation, the game of "Merry Matches" will keep them out of mischief for many a long hour until "gentle spring" comes round again.

Prize Essay.

NO. I.—CONCERNING "T S."

OF all the definitions of happiness that I have met with among authors, ancient and modern, there is none that has dwelt so much in my memory as this one of Addison's, "A healthy body and a mind at ease," which is a translation from Juvenal, "*ut sit mens sana in corpore sano*;" and perhaps the best commentary upon it is that the one cannot very well subsist without the other. Being much addicted to philosophy—peripatetic, not sedentary—my thoughts have often turned upon this subject; but scrawling these lines where I am now, enjoying the ineffable luxury of fragrant—not poetically, but literally—country air, with a variegated landscape stretched out before me of waving corn-fields, hop-gardens, and orchards, and the hearty hospitalities of an ancient farm near at my service, it requires a certain power of abstraction to enable one to realise the perpetual struggle which so many, in crowded cities pent, have to maintain against the demon of ill-health. Life, I fancy, would be more tolerable here, with no better daily fare than a crust of home-made bread-and-cheese, and a pot of home-brewed beer, if it be true, as I should think it is, that "life is not to breathe, but to be well." I never felt so much disposed to regret the unkindly fate which made me a "clerk" instead of a peasant. Where ignorance is bliss 'tis a folly to be wise: who realises as he does the truth of the phrase "the sweets of toil?" We, unblest by fate—well, I hope we realise it too, if not in the same natural sense, at least in a sense of duty conscientiously performed.

Surely the times are sadly out of joint. Was it ever intended that the human machine should be in a chronic state of disrepair? I never see a chemist's shop without reflecting what a testimony it affords of the degeneracy of the race. A chemist's stock—what a wonderful, what a melancholy exhibition it is—what a tale of human infirmities does it not unfold! Alas! The march of civilisation, with its deteriorating occupations, undreamt of by our forefathers, have reduced us to a dependence upon the physic of the chemist for the relief of evils, which a liberal indulgence in the physic of the fields, or the ozone of the ocean, might have altogether prevented. This brings me to my point.

Of all the developments of civilisation, there is none more marvellous or revolutionary in character, none which marks a wider departure from the primordial conditions of society, than telegraphy, which annihilates both time and space; and, under some circumstances, there are few occupations more trying to the health. In country offices, where the conditions are such as to allow of a break in the labours of the day; where no long journeys in a close

atmosphere practically extend the hours of duty, but the gentle breeze of heaven blows, racy and refreshing; where meals are enjoyed in comfort at home, and official restraints are not necessarily irksome, the burden of the work is not appreciably felt; but in large cities, where these conditions are absent, we often see the results in premature breakdown and decay. This is particularly the case as regards T.S., to which my subsequent remarks will exclusively refer.

It has often occurred to me that the practice of recruiting T.S. direct from the telegraph schools in London is carried too far. It floods the office with youths, many of whom are constitutionally weak, and unequal to the heavy strain which the work of that tremendous place imposes, just at that stage of adolescence when healthy influences are most essential to the proper growth and development of the human frame. Experience since the transfer is not reassuring as regards the physical future of these youths, a proportion of whom, instead of growing into strong, capable men, will in all probability break down prematurely, and lead an ailing, valetudinarian kind of existence—a care to themselves and a burden to the Department. To such, the prospect of a pension “at sixty years of age” (the official land of promise) is a grim joke, a species of irony which is not kind; for the probability is that comparatively few will live to be entitled to, not to say enjoy it. Doomed to die in the wilderness is, I fear, the fate written upon but too many of their pale and weary countenances. T.S. ought to be the end and aim, the goal of telegraphic ambition. How is this to be realised? The question is to be a large one, but the main features (for I am not going into details) of the scheme I would advocate are very simple, and may be briefly stated. Let all, or as nearly all as practicable, new appointments be to the provinces, and all appointments to T.S. consist of maturely grown, seasoned men from the provinces; that is, send the saplings away to ripen under country suns into well-grown trees. And it would be necessary to raise the standard of classes in T.S. (or, at any rate, to abolish the fourth class), making the lowest class in T.S. approximate more nearly to the highest in the provinces, so that the sacrifice of country residence (for a sacrifice in many respects it is) should be better worth while than, to my mind, is the case now. Select for service in T.S. those best adapted all round for its conditions, and fill the gaps with fresh appointments. Deficiencies would, of course, be made good from the schools, the sum and substance of my contention being that this source of supply, instead of being, as now, direct and primary, nay, almost exclusive, should be subsidiary and accidental. Whatever may be said of this plan (and it is submitted with all deference, and more by way of suggestion than in any spirit of dogmatism), I believe those who have given thought to the subject will agree that T.S. might with advantage be recruited much more largely from the provinces than it is now, whether with regard to mitigating the evil specially referred to or as affecting the efficient working of that great heart of our telegraphic system.

There is one little impediment to its realisation—I mean the mixed relations of the Postal and Telegraph Departments. Local knowledge is indispensable to the sorter, and, as in the provinces the sorter and telegraphist are one and indivisible, transfers are impracticable. I have, indeed, a conviction that the stationary principle, necessarily applied to the Postal Service, is a mistake as applied to the telegraph, which, I believe, would benefit in many ways by a freer circulation of staff.

These are subjects which invite discussion, and it appears to me that a free expression of intelligent opinion upon them might prove interesting, if not useful. My own decided impression is, that provincial clerks, particularly in favoured localities, have much to be thankful for; and that, with the present comparative inducements, they would ill exchange the various advantages, official and extra-official, of country residence, for the noise and bustle of a great city, and the wearing influences of a huge central office. But this, of course, is to some extent a matter of taste. VETERAN.

THE NEW YORK LINEMEN.—The linemen of New York city and vicinity number about 1,000. Their duties, unlike in smaller cities, are unceasing and arduous. As an example of the work they perform, it might be stated that the Western Union have very few poles in the city less than seventy feet in height. To climb poles ranging from seventy to ninety feet is not among the easiest of their duties; while to gain access to the roof of buildings after ascending from five to ten flights of stairs is not often accomplished without more or less trouble. Considering the work performed, their pay is remarkably low, ranging as it does from 55 dols. to 80 dols. per month, 65 dols. being about the average. This class of help is better remunerated, however, than the telegraph operators. —*Telegraphist's Advocate.*

Miscellaneous Items.

THEN AND NOW.—Forty years ago there was not a telegraph office in existence, and to-day the number reaches 51,840.

AMERICAN TELEGRAMS.—Statistics prove that the average number of words in telegraphic despatches in America is fourteen words per telegram. It should be stated, however, that this is only true of despatches sent during the daytime, as the average number is higher for telegrams sent during the night at reduced rates.

BELGIAN TELEGRAPHS.—The State telegraph engineers of Belgium are engaged in finishing the arrangements and necessary modifications in the telegraph system and apparatus, in order to fit it for the simultaneous transmission of telegraph despatches and telephonic conversations.

AN ELECTRICAL SUICIDE.—As has often been remarked, the uses of electricity seem to be illimitable. It has more than once been suggested as the best agency for the infliction of capital punishment, and it has just been used with great success as a means of self-destruction. A young man of Jamestown, Pa., the other day deliberately committed suicide by taking a plain iron rod and holding it to an exposed point on an electric light wire. Death was instantaneous. —*Telegrapher's Advocate* (New York).

PHENOMENAL FAST SENDING.—On August 26, Mr. C. B. Wood, Philadelphia, in 8 hours, 32 minutes, sent 818 messages (Printer). He began at 8.25 a.m., and finished at 5.30 p.m. He lost 33 minutes balancing, changing wire, and waiting for business. The actual time of working was thus brought down to 8 hours 32 minutes, which gives an average rate per hour of 96½. This, we believe, eclipses any previous record. In one hour he sent 104 messages, and in two consecutive hours, 200. The next best record is said to be that of Mr. Noyes, of New York, with 800 messages sent in nine hours.

PRODUCING ELECTRICITY DIRECTLY FROM COAL.—Mr. Edison claims to have succeeded in producing electricity directly from anthracite coal. He says he meant to have shown the process at the Electrical Exhibition were it not so extremely “nasty” and dangerous. If this can ever be accomplished with safety, he said, it would do away with engines and boilers in connection with the production of electricity, but it is as yet only a scientific experiment. Still, he obtained a very strong current in this way, though not without risk, since all the windows were blown out of his laboratory in the process. —*Electrical World.*

WIRE CUTTING JUSTIFIED.—John Kern, who was arrested some time ago on the charge of malicious mischief, preferred by the Baxter Overland Telegraph and Telephone Company, in Philadelphia, was acquitted last week before Judge Elcock. It was in evidence that the Baxter Company had stretched wires over the houses occupied by Kern and his neighbours without having secured permission to do so. He cut those over his own premises, and also those over the premises of his neighbours at their request. In charging the jury, the judge said the company had no right to place the wires over the premises without the consent of the occupants, and, having done so, the defendant was justified in cutting them. —*Electrical World.*

AMERICAN TELEGRAPHISTS.—The sad death of Operator Cummins at the key at Petersburg, Va., is typical of the impending fate of many others of our quiet, uncomplaining toilers. “Monk” Monroe’s brief message, “Send a doctor—I am going up the hill,” is matched by Mr. Cummins’ “Been spitting blood—take it easy.” Poor Monroe was found dead with his hand on the key, and Ned Cummins fell in the middle of his press report. Bad pay, poor food, and foul air in the office soon tell the tale. But the would-be monopolists don’t care—operators are plenty, and the delay is not much. Poor operator stricken with the blindness of death, a brief delay in the report, new victim secured and work resumed with, “Cummins just died; I’m his sub.; go ahead, ‘address,’” and all is over.

A FEAT IN TELEGRAPHY.—As a feat in telegraphy (says the *Melbourne Herald* of Aug. 1) the shortness of the time occupied in the transmission of Reuter’s telegrams announcing the result of the Goodwood Cup, run in England yesterday, may be mentioned. The race was run at 3 o’clock in the afternoon, Greenwich time, and the telegram was despatched from London at 3.17 p.m. It reached the office here at 2.50 a.m. Melbourne time, and was published in this morning’s papers. Allowing the 9 hours 40 minutes which Greenwich is behind Melbourne in point of time, this makes the actual time occupied in transmission from one end of the world to the other, 1 hour 53 minutes. This message probably came through more quickly than any message previously transmitted either way, and is regarded as the “best on record.” The message sent by the Marquis of Normanby to the Queen and Prince of Wales, announcing the opening of the Melbourne International

Exhibition, occupied about three hours longer in actual transmission.

ELECTRIC TRAMWAYS.—One of the most successful electric lines now in use has recently been laid in Brighton, and is the sole property of Mr. Magnus Volk, a well-known consulting electrical engineer. This line now runs from the Aquarium to Kemptown, a distance of about one mile along the sea-shore. When first opened, on Aug. 2, 1883, its length was under a quarter of a mile, viz., from the Aquarium to the Chain Pier. So great was the success of this enterprise, that the proprietor, after gaining the necessary permission, extended it to its present dimensions during last winter. Now, to look upon the undertaking from a scientific point of view (for this Journal does not deal with electricity financially, but scientifically), electrical energy is stored up at Kemptown station by means of a Siemens' dynamo driven by a fixed Crossley gas-engine of 8 h.p., and conveyed by cable to the rails, whence it is carried to the motor by means of the car wheels. The electro-motor is beneath the floor in the centre of each car, and by it the carriages are driven with ease when fully loaded at the rate of eight or nine miles an hour, occasionally, however, completing the distance at as high a speed as twelve or fifteen miles in sixty minutes. Taking into consideration that the gradients over which the cars travel are very heavy—for instance, that on the east passing from under the Chain Pier being 1 in 16—the setting up of this railway is a great step towards the introduction of electric trams and the abolition of over-worked car-horses, because, it stands to reason, if a vehicle accommodating thirty persons can be propelled electrically with ease at the rate of eight or nine miles an hour over a shingly beach, a similar car driven by stored electricity might be introduced in most of our wide thoroughfares, and relays of electrical energy could be introduced at intermediate stations on the road. All persons who have travelled by Mr. Volk's car have expressed the liveliest satisfaction of that gentleman's experiment. Enterprise and capital would soon forward the universal adoption of electric tramways.—ALFRED INNES POCOCK.

Metropolitan Items.

CENTRAL TELEGRAPH OFFICE, LONDON.

MR. A. OATWAY has proceeded to Cairo to superintend the telegraphs there. He takes with him every good wish from those who were acquainted with his untiring courtesy of manner.

THE Telegraph Contingency has arrived safely at Cairo, a portion of which has been despatched "up country."—"T. S." CORRESPONDENT.

MR. FIELDER AND THE "KANGAROO."—In our last issue, we hoped to be able this month to announce Mr. W. Fielder as the winner of the splendid prize offered by Messrs. Hillman, Herbert, & Cooper, of Coventry, for the shortest record in the 100 mile "Kangaroo" competition. Mr. Fielder, however, did not "come in first," but he proved himself a splendid rider, and fairly tested the qualities of the "Kangaroo." Mr. Fielder modestly confesses that he never expected to win the gold chronograph, because some of the very best riders in England had entered the lists; in fact, he states that he considered the chances one thousand to one against him, which speaks volumes for the pluck of the T.S. bicyclist. Then, again, most of the competitors had been practising long-distance rides. Another disadvantage was that all the riders, with one exception, were supplied with "Racing Kangaroos," but Mr. Fielder had to be content with a "roadster." In justice to the makers, we must state that it was their intention to supply Mr. Fielder with a "racer," but, by some awkward mistake, the machine did not arrive until 8 p.m. on the Friday before the race, and Mr. Fielder left Paddington for Twyford at 7 p.m. on the same day. The racer would have been nine or twelve pounds lighter, a consideration in a distance of 100 miles. Glancing over the *Cyclist* report of the competition, we find that the winner, Mr. G. Smith, made no stoppage on the road, while Mr. Fielder had twenty minutes' rest for dinner, and he made ten other stoppages of about five minutes' duration, making a total of 1h. 20m.; the road, too, was bad in some places, and the weather was not everything that could be desired. Taking all these drawbacks into consideration, we think that Mr. Fielder's performance on the "Kangaroo" a remarkably fine one, and we hope that the Electric B and A Club will show their appreciation of the energy and courage displayed by one of their most worthy members. Mr. Fielder's average riding pace for the 100 miles was 12 miles an hour, and as that gentleman completed the distance within 10 h., the makers have presented him with a bronze medal. Messrs. Hillman, Herbert, & Cooper have also written to say that Mr. Fielder being the first to win a race on the "Kangaroo," they have decided to present him with a gold Maltese cross.

Provincial Telegraph Offices.

CARLISLE.

THE meetings of the Church Congress, October 1 to 3, gave rise to a considerable amount of press-work at Carlisle, in dealing with which we had the assistance of twelve clerks from N.T. Upwards of 40,000 words were despatched each day, the bulk of which, being handed in at 6 p.m., troubled us very little, as five Wheatstone circuits, in addition to key circuits, gave ample facilities for disposing of the work.

In connection with Lord Randolph Churchill's speech, on October 8, the work was very much heavier—45,000 words were actually punched after 8.30 p.m., and over 100,000 "put through." Our superintendent, Mr. Scott, had made excellent circuit and other arrangements; but, as the messages were much longer than had been anticipated, the staff, augmented by ten men from N.T., was fully occupied.

CHESTERFIELD.

THE rumour of a new P.O. purchased by the Government is very well received by the whole of the staff, who have suffered severely through illness at the present office. The future office, I may say, is opposite the present one, and is pretty central.

Our new postmaster, the late C.C. in P.O. at Reading, commenced his duties last month. He is a man of long service and large experience, and we trust, as we have every reason to think, we shall get on amicably together, though our severe loss in the death of our late postmaster seems almost irreparable.

COLCHESTER.

AN important change has recently been made here by the abolition of the Umschalter switch arrangements. These were inaugurated ten years ago, viz., August, 1874, and provided for certain offices, for which we previously had to transmit, being put through to the central office direct. The coming reduction of tariff has, however, led to the necessity of superseding the switch system by direct wires to the more important out-stations, and accordingly the two wires to T.S. that carried the switch work have been permanently joined through to four offices. At the time the system was established, it was quite a novelty in this district, and it became the subject of much interest by the department for some time afterwards. A pneumatic tube is about to be fixed here for use between the counter and instrument-room. Another wire to T.S. is also shortly to be opened, making three wires to London, two of which will be duplexed.

EDINBURGH.

SUNDAY DUTY IN THE PROVINCES.—A crowded meeting of Edinburgh and Leith telegraph clerks was held in the Ship Hotel, Edinburgh, on October 4, to consider the Postmaster-General's reply to the memorial for overtime payment for Sunday labour. The chairman briefly detailed the steps taken for the purpose of having Sunday labour recognised as exceptional work, and said that, having put the facts of the case fairly and accurately before the Postmaster-General, and having received from him an answer to the effect that nothing could be done, they had met that evening to consider whether they had reasonable grounds for pressing their grievances arising out of Sunday labour upon the authorities. Communications from various centres having been read, the meeting proceeded to consider the first resolution, which pledged those present to use every means to obtain extra pay for Sunday work. In supporting this resolution, one speaker said that the reply evaded the real point at issue, viz., Why should London be treated exceptionally from the rest of the country in regard to Sunday labour? The same question had been asked in the House of Commons, and in reply, Mr. Fawcett pleaded that "Sunday work in London had always been exceptional, whereas in the provincial offices, including those in Scotland, it was the rule." Sir Herbert Maxwell considered this unsatisfactory, and pointed out that "the right hon. gentleman had not answered his question, which was, 'why Sunday labour was reckoned exceptional in London and not in Scotland?'" To which the Postmaster-General replied, "There was very much less Sunday labour in London." Well, if Sunday labour was not exceptional in Scotland, how was it that female clerks, employed in instrument-room duties, were not called on to take their share of this work, which, according to Post-office rule was ordinary labour? The fact was, the duty was quite as exceptional in Edinburgh as in London. A special attendance-list was made up for that day, and most of the commercial work dealt with on Sunday was treated in a special way. No one could deny that it was exceptional to compel any one to work thirteen days at a stretch; indeed, in no respect could Sunday

work be fairly reckoned ordinary labour. As a matter of principle, was it just to treat as exceptional, and pay for as overtime, work done in London, while similar work performed by persons of the same class in Edinburgh was treated as ordinary labour, for which no extra pay was given? Their contention was, that the principle was unjust, and as they believed, they laboured under a decided disadvantage as compared with London, in regard to Sunday duty; and as they had not yet received anything like a satisfactory reason why such work was treated and paid for as overtime in London and not in Edinburgh, they intended to do everything in their power to obtain overtime payment for the extra duty. Another speaker said that Mr. Fawcett's scheme was, according to his own reply, carefully considered. Well, in his carefully-prepared scheme no provision was made for the treatment of Sunday labour in the Metropolitan district offices as exceptional work. Now, it was only fair to believe that the Sunday labour of the Metropolitan district office clerks received as careful consideration when the revision was drawn up as did the Sunday labour of the provincial clerks; yet in July, 1882, Mr. Fawcett was convinced that he had erred in treating Sunday labour in Metropolitan district offices as ordinary labour, and, therefore, he sanctioned overtime payment in their case. Mr. Fawcett told us that we had laid no new facts before him which were unknown to him in 1881. Now, that was a new fact, and we laid it before him as soon as it came to our knowledge; and we now urge that, as there was a mistake made in the case of the Metropolitan district clerks, so there was a mistake made in not recognising our Sunday labour as exceptional. In his answer to our memorial, the Postmaster-General stated that the scales of pay fixed in 1881 were intended to cover the payment of Sunday duty in the provinces, but in London the scale was not fixed to include this. Well, on examining the scheme, it was found that the maximum pay for senior clerks in London was 23s. per week higher than the maximum for first-class clerks in Edinburgh, so that it looked as if there had been another mistake. If their claim had not been a reasonable one, the authorities would have had no difficulty in exposing its unreasonableness; but the arguments of the provincial clerks were evaded, and they were simply told that their appeal was practically a claim for higher pay. Admitting for a moment that the appeal was one for higher pay, was it unreasonable? The maximum of first-class clerks in Edinburgh was no higher now than the maximum which it was possible to reach by the scheme fixed in 1871. Was it unreasonable to suppose that their labour was worth more to the Department now than it was thirteen years ago? Telegraph clerks possessed greater skill, more technical knowledge, and brought greater experience to bear on their work, so that the claim, even if it had been put forward, deserved attention. Their appeal, however, was an appeal for just treatment—a protest against the principle—the unjust principle—of giving to one clerk that which was withheld from another. They had a good case, they had the support of the press, and so they intended to urge their claim until it was granted. Other speakers followed, and the meeting was brought to a close with a vote of thanks to the chairman.

The Electric Quadrille Assembly held their first meeting this season in Oddfellows' Hall on Saturday, Oct. 11. There was a good attendance, and a very enjoyable evening was spent.

GLASGOW.

THE visit of Lord Salisbury to Glasgow was productive of a large increase in press work. On the evening of his arrival, the number of words which passed through our hands amounted to 112,549. The following evening, no less than 480,751 were disposed of, and again on Friday, 468,514 were wired off without a single hitch. The arrangements for the reception of the news were complete, twenty-two transmitters being employed, and about sixty operators, although the figures are, perhaps, not the biggest done out of T.S. Yet, withal, the rapid manner in which the work was got through speaks well for the excellent arrangements made by the officers in charge, and for the clerks who were engaged on the work. The reporting staff expressed satisfaction at promptitude which characterised the despatch of their "copy."

INVERNESS.

ALL Morse instruments in this office, with one exception, have been replaced by Sounders, much to the comfort and satisfaction of the staff, and the cleanliness and tidiness of the instrument-room. One of our Glasgow wires has been fitted with a duplex Wheatstone, set in anticipation of heavy work next summer, both wires—duplex Sounders—having, sometimes, been taxed to their utmost capacity during the past season.

LIMERICK.

NEW LINES.—Three new circuits have recently been added to the lines concentrating in this office, viz., Ennis, Roscrea, and Pallas.

kenry. A fourth wire is intended, giving direct communication with Tralee. These additions are all authorised under the reduced rate rearrangements, and several of the existing circuits are to be duplexed.

PARCEL POST.—The parcel post department is working smoothly and satisfactorily in this district, under the able supervision of Mr. Conway, the head-postmaster.

MR. F. P. HOOK, the popular and efficient chief clerk at Limerick, is at present in London on his holidays.

APPOINTMENT.—Mr. Eugene A. Wickham, first-class telegraphist of this station, has been reappointed provincial charge-clerk, with enlarged qualification for head offices. Mr. Wickham already held this appointment some time ago, and discharged the duties efficiently, but surrendered it in order to take indoor promotion. His reappointment is popular with the local staff, amongst whom he is a favourite.

MESSRS. O'HANLON AND GLEESON, of this office, have been on special relief duty in Dublin for the past two months.

THE local Postal Telegraph and Harmonic Society still exists, and efforts are about being made to extend the sphere of its usefulness.

LEARNERS.—In view of the demand likely to arise for skilled telegraphists with the introduction of the 6d. tariff, the postmaster is increasing the number of learners at this station, who are being taught on local circuits set up for their special training.

THE TELEGRAPHIST continues to be read here with great satisfaction, and is voted all round a most popular journal.

MANCHESTER.

THE annual class for the study of the principles and practice of telegraphy has commenced its session at the Manchester Technical School, under the instruction of Mr. Martin, of the engineers branch. Between forty and fifty students assembled on the 6th instant, and the course of their lessons will include the following subjects:—Materials used in the construction of lines of telegraphs; various systems of telegraphy; faults, their nature and prevention; application of electricity to railway working; earth currents; testing materials; systems in use to increase capacity on wires; construction, laying, and repair of submarine cables; reproduction of speech. The lectures will be experimentally illustrated with the aid of the latest and most approved apparatus. The City and Guilds of London Institute offer silver and bronze medal and money prizes to the successful students. Students are strongly advised to join the class in magnetism.

PORTSMOUTH.

THE event of the month has been the *Wasp* inquiry, which, however, only run out one day, and gave us a little over 20,000 words of news. The extra expense of its disposal came to half a guinea! Not so bad, considering the usual style of these events. As a rule, the department does special work at a loss.

At a meeting of the Sick Fund on the 30th ult., progress was reported, and seventy-four members were declared to have joined. This number has since been increased to eighty, a result which is far beyond expectation. The amount of £5. 8s. was handed to the trustees for investment in the Post-office Savings Bank; and, as it was decided not to commence giving benefit until the expiration of another three months, that sum will be more than doubled by the time sick payment is allowed. In this way it is hoped that five shillings a week may be a safe minimum to start with.

ALTHOUGH a first-class office, we only receive two weeks' leave here. It is thought to be due to the absence of night duty. We should be glad to know if any other first-class office gets three weeks which is not open all night. Perhaps some of your readers can supply this information, and furnish us with a case for quotation.

THE *Colossus*, the last new ironclad built, has been fitted through-out with the electric light, and the trial has proved most satisfactory. It has been carried out by the Anglo-American Brush Company. Every part of the ship is included in the arrangement, which is probably the most complete yet put up. All ships are rapidly being supplied with this increasingly popular illuminant.

SHEFFIELD.

WE are pleased, Mr. Editor, to see that you intend to commence the publication of technical diagrams, and we hope that you will receive such a measure of support as will warrant you keeping on with the issue of the journal.

Social Notes.

BELFAST.—On Saturday, Oct. 27, Mr. E. Hayes, whose promotion has been already noticed in this column, was the recipient of a beautiful and valuable piece of plate, consisting of tea and coffee service and salver, from the members of this staff, as a mark of their respect and esteem, on his departure for Derry. The presentation took place at the Post Office, in the presence of a large number of the staff. Mr. J. Kelly, sen., having been voted to the chair, an address was read by Mr. Caldwell, conveying to Mr. Hayes the high appreciation entertained by the staff in general of his many sterling qualities. Mr. Hayes having replied, giving expression to feelings of regret at his severance from the Belfast office, where he had spent so many happy years, most of those assembled adjourned to the Clarendon Hotel, where, after supper, Mr. McGonagle being called to the chair, several toasts were proposed, the toast "Our Guest" being received with great warmth and duly honoured. Other toasts followed, the speakers being Messrs. J. Kelly, sen., Caldwell, Marley, Ellis, Scarborough, and O'Connor. The proceedings were agreeably interspersed with songs, glees, sketches, &c., by Messrs. Hughes, Anderson, Henry, Marley, Stannage, O'Hagan, H. and A. Orr, &c.

BOSTON.—We regret to announce the death, after a long and painful illness, of Mr. Christopher Buck, a member of the postal staff. The funeral, which took place on Tuesday, Sept. 23, at the Boston Cemetery, was attended by a large number of officers of both departments.

GLASGOW.—Mr. G. Gregg, acting on medical advice, has resigned his appointment, owing to failing health. A change of climate has been recommended him, and for this purpose he will sail shortly for Christchurch, N.Z. Previous to his leaving the office he was presented by his fellow clerks with a purse and sovereigns, as a mark of esteem. He carries with him the sincere wishes of the staff for *bon voyage* and speedy enjoyment of robust health.—The remaining swimming competitions in connection with the club resulted as under:—Learners' Race, T. Hall 1, D. MacGregor 2; won easily, MacGregor nearly forgetting to come up after preliminary dive. Three Lengths' Race, J. Rainey 1, A. MacKellar 2, F. Scott 3; won by few yards. Mr. Geo. J. Clarke, president of the Club to Encourage the useful Art of Swimming, has kindly announced his intention of giving three prizes for a handicap open to the club; details next issue.

INVERNESS.—Mr. Geo. Mackenzie—one of our first-class clerks—as president of the Inverness Mutual Improvement Society, delivered the opening address for the ensuing session, on Wednesday evening (October 8), to a large and appreciative audience, on the subject of "Modern Oratory." No mean orator himself, Mr. Mackenzie did ample justice to his theme, and for the space of an hour held his listeners spell-bound, concluding amid hearty and continued applause.—Apropos of telegraphic blunders, a very amusing error was observed here the other day. A message ran thus:—"Send two black cows and waistcoats," &c. Had the mistake not been rectified, I fancy the recipient of the message—a tailor—would have been somewhat perplexed as to the cut of a cow's waistcoat. An equally ludicrous error came under my notice a few years ago. I have seen something like it in a magazine article; but this, as well as the above case, I can personally vouch for as being absolutely true, having seen them both:—"Your wife was this morning safely delivered of a fine big box!" That message was so written by a *young lady*. Moral—Don't always take what you get," even if "it is on the slip." While on the subject of errors, can any one tell me why provision is made in the rules for the correct signalling of "Cowbridge" by using the code letters "CNE," in order to distinguish it from "Trowbridge," while "Coatbridge" is entirely ignored? The signals for the three places are, leaving out spacing, identical.—I. V. LEAF.

LIVERPOOL.—The return cricket match between the Manchester and Liverpool clubs, which had been looked forward to with the greatest interest here, took place on the ground of the Spool College, Fairfield, on Saturday, August 30. There was a very good attendance, considering the unpropitious state of the weather, a number of our lady friends being present. Whamond won the toss for Liverpool, and decided to send the visitors in first. Messrs. Beswick and Mathews were the first pair of batsmen, the bowling being shared by Downard and Whamond. Mr. Beswick was clean bowled in Downard's first over, and Mathews was smartly thrown out by Whamond, a few runs later, whilst attempting a close run. With the exception of Auty (19) none of the few succeeding batsmen made any stand, seven wickets being down for twenty-six. Messrs. Williams and Warren, however, made some very useful additions to the score, the innings closing for forty-seven. Mellor was very smart behind the sticks, and Downard and Whamond, who bowled throughout, had a good analysis, the former taking five

wickets for twenty-five runs, and the latter four for eighteen. After a short interval, Liverpool sent in Mulligan and Mellor, the bowlers being Auty and Marriott; the first-named batsman having scored ten from Marriott's first over, a change was thought desirable, Jackson being the new bowler. Without any addition to the score Mellor was bowled; Downard came next, but at 23 he was splendidly caught by Marriott. J. Evans got his leg in front of a straight one from Auty, and Whamond joined Mulligan. Runs now came freely from both ends, and further bowling changes were resorted to. A separation was not effected until 50 appeared on the telegraph board, when Whamond put one up from J. Evans, and was caught by Auty, he having made 13. Morris was bowled after contributing 4, and Poole shared the same fate a few minutes later; Mulligan was caught by Marriott for a well played 27. Chappel, 4, and McConchie, and J. Owens, 3 each, were the remaining scores, the innings closing for 72, Liverpool once more defeating their Manchester *confrères*. Messrs. Auty and Jackson bowled very well for the visitors, the former taking seven wickets. Score:—

Manchester.		Liverpool.	
Beswick, b Downard	1	Mellor, b Auty	0
Mathews, thrown out	2	Mulligan, c Crosbie, b Auty ..	27
Auty, b Whamond	19	Downard, c Marriott, b Auty ..	5
Jackson, c and b Whamond...	0	J. Evans, lbw b Auty	0
Evans, b Downard	2	Whamond, c Auty, b J. Evans ..	13
Marriott, at Mellor, b Whamond	0	Morris, b Auty	4
Rawsthorn, b Downard	0	Poole, b Auty	0
Oneil, st Mellor, b Downard ..	1	Chappell, b Auty	4
Williams, c Mulligan, b Whamond	7	J. E. Owens, b Jackson	3
Warren (not out)	11	Merchant, b Jackson	0
Crosbie, c McConchie, b Downard	0	McConchie (not out)	3
Extras	4	Extras	13
Total	47	Total	72

The match was followed by a tea at the Compton Hotel, and a very pleasant evening was closed, all too soon, by the return of the Manchester team per the 11 p.m. train. [The above report was unavoidably crowded out last month.—Ed.]

MANCHESTER.—Mr. H. Schofield, of the engineering staff, has embraced the matrimonial profession. The event was kept so quiet that, when it became known, some little disappointment was felt by his brother officers that due recognition had been prevented. We believe the honeymoon was spent at Blackpool.

THE SCIENTIFIC TELEGRAPHIST.—The following S.G. was received by a lineman in the north of England:—"Can't get Newcastle bell to ring, and abduction on wires."

BIRTHS.—On Sept. 11, at Kingstown, St. Vincent, British West Indies, the wife of D. Morgan, Clerk in Charge West India and Panama Telegraph Co., of a son.—On Sept. 20, at Sheffield, Yorkshire, the wife of Mr. A. Freen, of a son.

MARRIAGE.—At St. Helen's, Low. Fell., on October 2, Mr. Joseph Gibson, telegraphist, Newbiggin-by-the-Sea, to Hannah Isabella, second daughter of the late Mr. J. Ashton, of Morpeth.

OBITUARY.—On the 14th September, 1884, at Heart's Content, Newfoundland, Mr. Ezra Weedon, the Superintendent of the Anglo-American Telegraph Company's Station, which office he had filled since 1866. Aged 45. His sufferings were long and severe.—On the 24th September, 1884, at Heart's Content, Newfoundland, Mr. James Bartlett, cable operator. Aged 49.

TO TELEGRAPH LEARNERS.

A FEW HINTS FOR THEIR GUIDANCE.

1. When first taken on by the department as a telegraph learner, spend a month or two in simply mooning about the office. Do not as yet attempt to gain any telegraphic knowledge whatever. "Slow and sure" should be your motto. 2. These preliminaries over, you may afterwards take your seat daily at some disused Cct, and gaze fixedly, with melancholy aspect, at the sounder and key alternately. This will teach you to fix your attention, and at the same time render you familiar with the apparatus. 3. After some weeks of this intelligent and arduous employment, you may, with advantage, apply yourself to the perusal of the Morse alphabet, as depicted upon the small cards presented to all learners. When you first attempt to send any of these characters, be sure to sit in the most uncomfortable attitude practicable, and either touch the key very gingerly as though it might bite, or grasp it violently, apparently defying invisible wild horses to tear you away. If you do not at first succeed in forming "A" like "I," "F" like "E," "O" like "G," &c., do not be distressed. It will come in time. 4. You

will then be justified in sending the little mottoes which adorn the cards before-mentioned, viz., "Turnips make oxen cheerful," "Earwigs infest summer-houses," &c. I may add that, if you have the sagacity to master in the course of some weeks the profound ideas conveyed in these axioms, you bid fair to adorn your profession. 5. By this time you will, no doubt, be in a position to invite conversation with other gifted learners at distant stations. And, though you will probably not understand the drift of each other's remarks, yet a mutual sympathy may be at once established by the interchange of numerous and emphatic — . . . —'s. 6. Should you be learning in an office of any size, you will find it is infested by an obnoxious species of individual called "C. C." These overbearing creatures will endeavour to persuade you, perhaps by blandishments, perhaps by an expression of countenance intended to convince you that, in their wrath, they are very terrible, to attend at various insignificant Ccts, long before you are appointed on a fixed and magnificent salary. *But don't you be a gaby.* Pretend, as a matter of policy, to do as requested, and, directly their attention is drawn off, act according to the dictates of your better judgment, and go out and enjoy yourself. You will be appointed just as soon for behaving thus conscientiously. And it will be wise to follow Mark Twain's advice, slightly altered: "Never 'sass' a C. C., unless the C. C. 'sasses' you first." 7. When first promoted to the charge of a Cct, begin as you intend to go on. Always send as fast as possible, quite ignoring the proper formation of letters and dispersing plentiful "rubs out." If the clerk at the other end does not at once send "RT," but, on the contrary, requires "RQ's," say "AAR," "get clerk;" and, if your opponent will not allow you to discuss the subject, send an "SG" on your own account, so as not to trouble the "C. C." and calmly await the result. Even though you should not by this means succeed in having your enemy removed, a "BQ" will probably arrive which will, at least, give you the satisfaction of being removed yourself. N.B.—If the BQ regarding your bad working is sent you, a good plan is to quietly destroy it when unobserved. This will defer the evil hour. 8. As regards receiving, when you cannot read a station, it will, of course, be the fault of the "duffer" at the other end; so, if you get in a great fog, say just what you feel inclined to him, and then quietly take off the line wire and slip away, and the sooner you are off duty the better for you. (It is well not to try this too often.) Having looked thus far into your future career, and sent you "on your way rejoicing," I must leave you for a time to your own resources, feeling sure that if these hints are taken, added to others which will naturally suggest themselves to your fertile imaginations, you will soon be recognised on all hands as the telegraphists of the future.—EPEL.

ALPHABETS OF "OLD MAGNETIC" AND "U.K." MEN.

B. AND I. MAGNETIC COMPANY.

Bottomley, W. F., District Engineer, National Telephone Company.
Crosbie, A.
Daniell, W. C. (Daniell & McGrath) Agents, Eastern and Anglo-American Telegraph Companies.
France, W., Superintendent, P.O. Telegraph.
Greenhill, M. C., Secretary, The British Insulite Company, Limited.
Hargrave, J. W., Retired.
Tenoure, Alfred,
Lundy, Charles, Superintendent, Direct United States Cable Co.
Mason, Robert, Post-Office Telegraphs.
Oldham, John, Manager and Engineer, River Plate Telegraph Co.
Powell, William.
Rowe, Thomas, District Engineer, L. & C. Telephone Company.
Sanger, Thomas, formerly Irish Divisional Engineer. P.O. Telegraph, dead.
Tansley, Edward, Superintending Engineer, P.O. Telegraph.
Warburton, E.C., Telegraph Engineer, L. & Y. Railway Company.

UNITED KINGDOM COMPANY.

Andrews, William, Manager, Indo-European Telegraph Company.
Blewitt, E., Relief Superintending Engineer, P.O. Telegraphs.
Comport, George, Superintending Engineer, "
Doherty, John, " " "
Edwards, John R., " " "
Fletcher, J., Engineer, United Telephone Company.
Gregory, Edward.
Hughes, Thomas, Inspector, P.O. Telegraphs.
Ismay, Joseph, Superintendent, "
Jarvis, —, Assistant-Superintendent, P.O. Telegraphs.
Knight, J. H., Controller of Stores Branch, "
Mort, Samuel, dead.
Norman, —, Bristol.
Powell, William, sen., dead.
Shaw, W. H., formerly Divisional Engineer, P.O. Telegraphs, dead.
Turner, E. W., Liverpool, P.O. Telegraph.
Wood, —, Inspector, P.O. Telegraphs.

Correspondence.

To the Editor of the TELEGRAPHIST.

DEAR SIR,—In the remarks accompanying the explanatory plan of Dr. Muirhead's system of duplexing in your last issue, you say, "In the differential principle in use in this country, it is only necessary to make an artificial line so far as the resistance is concerned," &c. This is wrong, for upon all the long duplex lines in this country both resistance and inductive capacity are balanced, that is to say, resistance coils, condensers, and retard coils are used, the latter being a resistance inserted in the condenser circuit.

What I presume Dr. Muirhead to be aiming at is to still further imitate the actual cable capacity by adding resistance and condenser more proportionately in the compensation circuit—a step in the right direction, no doubt. J. M.

P.S.—Permit me to say your paper is getting much more interesting now, and appears to be falling into its proper groove.—J. M.

Engineer's Branch, 4, York-street, Manchester, Oct. 17, 1884.

EARTH-WIRES.

SIR,—I shall feel much obliged if you will insert the following query in your next number. Suppose an engineer had fifty instruments to connect up, could he with safety join the batteries (one pole of each) and the instruments to one earth-wire, or would it be necessary to have a separate earth-plate for each circuit? It seems to me that if one earth-wire would suffice, the engineer might use a gas-pipe for the whole of the circuits. I have heard of one return-wire for a number of telephone circuits, but I can hardly believe it possible. Apologising for my ignorance, I am, Sir, yours truly, AMPERE.

Exeter, Oct. 17, 1884.

Answers to Correspondents.

ASCUPART (E.H.). No room for your letter. See long par from E.H. on the same subject.—A. J. P. Afraid we cannot use your paper on "A Ride to Dartmoor." We are so pressed for space.—P. M. (GW). No room at present for telegraphic errors.—EDINA. Regret we cannot find space for "The Romance of Telegraphy." Many columns of interesting matter are obliged to stand over this month.—PRIVATE, CONSTANT READER, and J. W. C. We cannot give you definite answers to your queries. We have submitted the subjects to an authority, and the advice he gives is that your respective postmasters will answer the questions satisfactorily.

Queries.

TO AMERICUS.—A. R. will be pleased to learn whether the article on American telegraphs applies to Canadian telegraphs also.

WILL any of your correspondents kindly tell me if I may construct a telephone for my own private use (not buying parts), and whether I am able to use it privately, without molestation from the patentees.—G. S. A.

THE MACKAY-BENNETT CABLES.—The first Mackay-Bennett cable has already been used, and considerable progress is reported with the second. A special despatch of the 15th inst. from London to the *New York Herald* says:—"A large number of the members and associates of the Society of Engineers have been visiting the telegraph and cable works of Messrs. Siemens, and witnessed the coiling of the last portion of the Mackay-Bennett cable in the *Faraday*. They examined how the cable was tested in the ingeniously-contrived pressure tank, representing the average pressure of the ocean, and they pronounced the new cable the most interesting, accurate, and wonderful yet fashioned."—*Electrical World*.

A NEW OCEAN CABLE.—Washington, D. C., Sept. 2.—The State department is informed that certain proposals have been made to the Hawaiian government by an Australian cable syndicate for the laying of an ocean cable from Brisbane, Australia, to San Francisco. The committee of the Hawaiian legislature, having the matter in charge, have submitted a report favouring the granting of a subsidy of 20,000 dols. per annum for fifteen years, and a Bill in accordance therewith was presented by the committee. It was promptly passed to a third reading, and made a special order for the 15th. The Australian Syndicate propose to lay a cable between California and Queensland, communicating between and through the islands, Hawaii, Mani, Malakai, Oahua, and Kanai.—*Telegraphist's Advocate*.



